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AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

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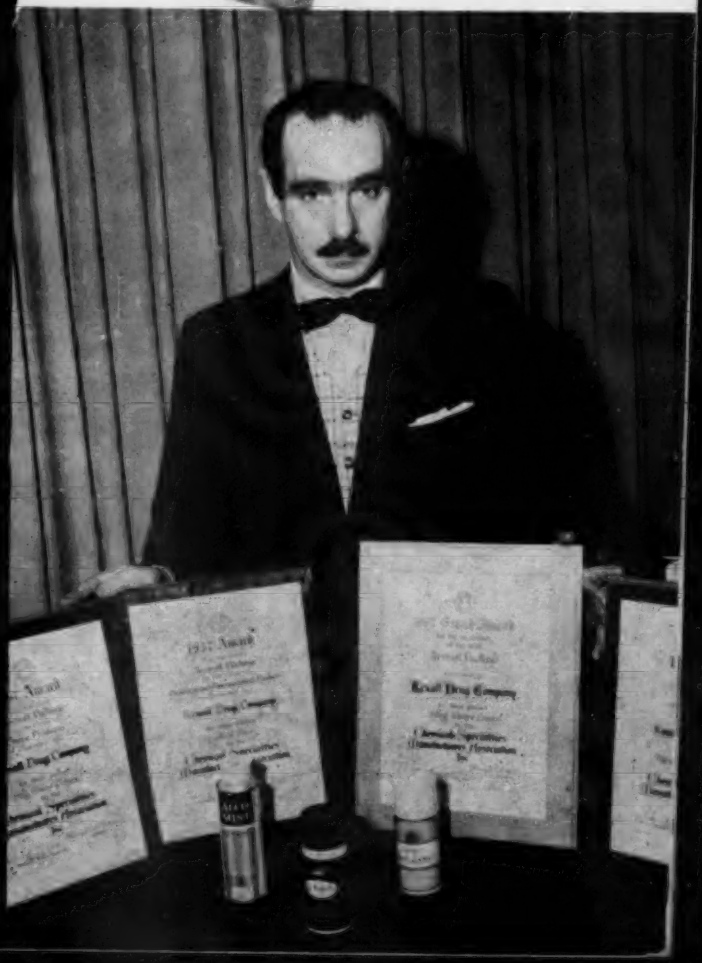

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JANUARY, 1958 VOL. 3, No. 1

AEROSOL AGE

The magazine of pressure packaging

THIS MONTH'S COVER

Big Winner in the annual Packaging Awards Contest of the CSMA's Aerosol Division was the Rexall Drug Co., Los Angeles. Rexall packages won first place for medicinal and pharmaceutical products (with "Alco-Mist"), shave creams ("Stag"), room deodorants ("Adrienne Space Fragrance"); as well as sharing the top award (for "Stag") with Helena Rubenstein. Receiving the armful of awards for the company was Dr. Henry S. Rudzki, director of Rexall's research and product development department. The awards were presented at the CSMA Meeting on Dec. 9.

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EDITORIALS

The Growing Resistance Problem . . .

THE problem of the growing resistance of certain insects (especially flies and mosquitoes) to a broad range of common insecticides bears close watching by packagers of aerosol insecticides. As pointed out in our "Aerosols in Review" column this month (page 26), it is general practice to test aerosol insecticides on houseflies and other insects that have been carefully bred to insure that they are *not* resistant to common insecticides.

This is somewhat like testing an anti-freeze mixture in an automobile at 20°F., even though the temperature may logically be expected to go down as low as —20°F. Or, equally impractical, it is like testing a vaccine on a guinea pig and then assuming it will be effective in humans. The insecticide so tested, if used against a resistant strain of the housefly, even in repeated and heavy applications, might show *no* really visible effect. After just one such incident the consumer could readily lose faith in his aerosol insecticide, and the next time rely on the age-old fly swatter.

This type of incident, in widely scattered instances, might not be particularly important (except that in each incident it could mean a lost customer); but as these resistant strains of insect pests continue to grow and spread more widely, major problems will result for the aerosol insecticide producer and marketer. It is well to point out here that, just as the popularity of aerosols spread mostly by word of mouth, so it could be gravely hurt by a similar spreading of the word that aerosols give only *limited* effectiveness against houseflies and mosquitoes.

Obviously, more realistic methods of testing aerosol insecticides need to be developed, and quickly. Also, within the limits of practicality, further efforts should be made to develop more efficient insecticidal aerosols. The recently developed "midget" aerosol is a definite step in the right direction, since it combines more powerful insecticide formulations with a metered valve which delivers a carefully pre-estimated amount of *killing* spray.

The situation has a bright side for the aerosol industry, too, for if handled with common sense it can help prove the aerosol's tremendous superiority over space sprays, and other older, less-effective control methods. Better aerosol formulations (that is, those designed to kill *resistant* as well as *non-resistant* insects), coupled with the usual advantages of the spray container, should give the aerosol an added edge over the hand sprayer as a pest control medium.

But, as with the Sputnik, there isn't much time to waste. These more powerful insecticide formulations should be developed and packaged as soon as possible.

A Stronger Publicity Program

The announcement that next year's publicity program of the CSMA's Aerosol Division will have wider and more effective industry support is a welcome one. With the additional funds and more solid moral support, the publicity committee and its agency should be able to do an even more effective job of spreading the aerosol idea down to a wider segment of the buying public.

Though hampered somewhat by a lack of funds, the program's first year has been a good one. The program for next year (which begins in April) deserves the widest support throughout the industry.

Barr Advises Better Dissemination of Aerosol Data to Pharmaceutical Field

"THERE appears to be an appalling lack of information on aerosols in the scientific literature," charged Dr. Martin Barr, associate professor of pharmacy of the Philadelphia College of Pharmacy and Science, before the Aerosol Division of the CSMA at the association's meeting in Hollywood Beach, Florida. Because of his illness, Dr. Barr's paper was read by Thomas D. Johnson Jr., of DuPont's "Freon" Products Division.

"To date, practically no information has been published in the pharmaceutical literature. Just where may one find data on such phenomena as the solubility of various drugs and their vehicles in propellants, the stability of drugs in vehicle-propellant mixtures, and the therapeutic effect of medicinals administered as aerosols? The reason may be that not much pharmaceutical aerosol research has been carried out, and perhaps much of the available information is not being published."

Dr. Barr suggested this "appalling" lack of information may be one of the factors hindering expansion of many pharmaceutical manufacturers into the aerosol field, and advised the aerosol industry, for its own benefit, to do "all it can to stimulate study and research in pharmaceutical aerosols." He declared that the aerosol possibilities for pharmaceuticals are practically limitless, and that "It is very likely that one day in the near future aerosols may be utilized as prescription dosage forms and will be compounded by the pharmacist in the drug store!"

He further urged that the industry stimulate basic research in the colleges of pharmacy by personal contact, equipment and supply contributions, and financial support of research programs. "In this way, basic data of importance to the pharmaceutical industry may be obtained and published. This will result in a stimulation of aerosol product development research.

"Although the great majority of pharmaceutical aerosols being marketed today are of the proprietary type, practically all of these products were developed either by an aerosol consultant or a contract loader. Although the importance of proprietary pharmaceuticals is recognized, the major growth of pharmaceutical aerosols will not reach its potential until more interest is shown in them by the major pharmaceutical manufacturers. The major pharmaceutical houses *are* interested in aerosol dosage forms, but will not produce them unless specialty products may be found. It is by the manufacture of such specialties that the manufacturers can expect to profit from their research; and they prefer to have such items available to the public on prescription only."

Harry Peterson, outgoing CSMA president, and James E. Ferris, new president.

Dr. Barr's paper repeatedly stressed that the potential for the aerosol in pharmaceuticals has barely been scratched.

"The total dollar market for pharmaceuticals for which aerosol applications may be found totals $190 million. If only 10% of this market is effectively converted into aerosol dosage forms, the potential market value for pharmaceutical aerosols should reach about $20 million, about six times its present value. It is the author's opinion that this estimated potential is very conservative ana should be at least doubled."

•

HE compared this "conservative" potential with the two and one-half million aerosol packages of medicinal and pharmaceutical items produced in 1956, declaring that this was only a fraction of one per cent of the total aerosol market. "There is little doubt that, with proper educational research, and developmental programs, this percentage may be increased many-fold in the coming years."

The major part of Dr. Barr's paper was devoted to a discussion of the various potential and actual uses for aerosol pharmaceuticals. He was especially optimistic about topicals, respiratory, and antibiotic applications.

Of topicals, he declared: "It is not unrealistic to philosophize that most externally-used products, such as

Al Gaines (Illinois Tool & Dye), Mrs. Jack Campbell (Continental Filling), and William Wellman (Colgate-Palmolive). Harry Peterson and Mrs. Peterson (Peterson Filling). Mr. Peterson is outgoing president of the CSMA. George Howe (Air Reduction Sales), R. D. Cosgrove (Ohio Chemical), and W. Earl Graham (Clayton Corp).

ointments, creams, linaments, lotions, and powders, may some day be dispensed as aerosols. One is all too familiar with the waste and messiness produced in the handling of most externally-used products by both physician and patient. The time consumed, the non-uniformity of application, and the irritation caused by manual application of the medication are other well-known disadvantages. The use of these types of products in aerosol form would eliminate most of these objectionable features."

He advised further research studies on nasal, throat, and ear sprays, but was particularly hopeful about the potential of the aerosol in all types of inhalation therapy.

"It is well known that many drugs are capable of being absorbed rapidly from mucosal cells by inhalation. In such cases, there is prompt entrance of the medicament to the blood through the alveolar membrane. In some cases inhalation therapy approaches the speed of intravenous therapy in its onset of action.

"The effectiveness of a medicament in pressurized form is dependent to a high degree upon particle size. For example, the particle size of aerosols intended for application to the lungs must be small enough to be carried by the air stream through the nasal cavities, pharynx, larynx, and trachea, and yet large enough so that they will be deposited on the lung tissue.

"Before intelligent developmental work may proceed in this field, much basic information must be obtained concerning the physical and chemical relationships between the propellants and medicaments which would find use in inhalation therapy. The factors which influence the localization site of the aerosolized medicaments (pressure, particle size, etc.) would also have to be established.

"Many inhalation aerosols have been intended for local pulmonary action. Thus penicillin and streptomycin aerosols have been administered by inhalation as adjuncts in the treatment of bronchopulmonary disease; epinephrine aerosols have been used in the treatment of bronchialasthma; and aleudrine, cocaine, procaine, lobeline, or pircotoxin, taken by a human subject, can cause an immediate increase in lung volume without producing systemic effects. Substances such as ephedrine, amphetamine, neosynephrine, aminophylline, and ammonium chloride have

(*Continued on Page* 60)

Ferris Elected President

James E. Ferris, manager of inorganic chemicals for Hooker Electrochemical Co. of Niagara Falls, N. Y., was elected president of the Chemical Specialties Manufacturers Association at the opening session of its 44th annual meeting at Hollywood Beach, Fla., last month.

Other officers named were: first vice-president, Donald M. King, president of Masury-Young Co., Boston, and second vice-president, George W. Fiero, coordinator of the manufacturing department of Esso Standard Oil Co., New York. Reelected to association posts they have held for more than a decade were H. W. Hamilton, secretary, and Peter C. Reilly, vice-president and treasurer of Reilly Tar & Chemical Corp., Indianapolis, treasurer.

Named to three-year terms on association's Board of Governors were Charles E. Beach of John C. Stalfort & Sons, Inc., Baltimore; Charles E. Allderdice, Jr., of The Bell Co., Chicago, and Harry E. Peterson of Peterson Filling & Packaging Co., Danville, Ill.

More than a thousand representatives of companies which manufacture and market specialty chemical products for use in home and industry attended the meeting.

G. F. Kerbey (Fairfield), Gordon Gilray (Precision Valve), Bud Lindsay (Van Ameringen Haebler) and J. W. Felton, Jr. (Magnus, Mabee & Reynard). James Ferris, newly-elected CSMA president, and Mrs. Ferris (Hooker Electrochemical). Tom and Mrs. Bogaard (McLaughlin Gormley King); and Mrs. and Fred Lodes (Lodes Aerosol Consultants).

The Gulf "SA" Valve

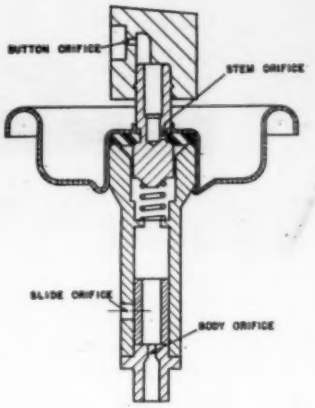


FIGURE I, CROSS SECTION OF EXPERIMENTAL "SA" VALVE

THE Gulf "SA" (for "Spray Anyway") aerosol valve, introduced to the industry for the first time last May by Gulf Research & Development Co., Pittsburgh, was explained in detail in a special paper given before the Aerosol Division's Scientific Committee. Prepared by A. J. Samuel, R. V. Sharpless, and A. C. Miller, all of Gulf Development, the paper was delivered before an informal meeting of the committee by R. V. Sharpless.

The principal advantage of the Gulf "SA" valve, Mr. Sharpless pointed out, is that it permits spraying with the dispenser held either upright or inverted, "without excessive loss of pressurizing gas." In fact, he declared, specific variations of the valve permit the dispenser to be operated satisfactorily in *any* position.

The "SA" valve differs principally from conventional valves and special valves (employing a by-pass in the valve body to permit spraying with the dispenser held either upright or inverted) through use of a slide or other gravity-activated device, which opens or closes an orifice in the valve body. "When the dispenser is sprayed upright, the orifice is closed, and the spray stream is fed through the eductor tube. When the dispenser is sprayed inverted, the orifice is open, and the contents pass directly into the valve body."

Mr. Sharpless reported that since first introduction of the valve in May, Gulf has been working closely with several valve manufacturers. The valve is expected to find use in such products as paints, garden sprays, surface insecticides, sun tan lotions, insect repellents, hair lacquers, foot sprays, and various pharmaceutical products.

"Another feature of the new valve is that it may be designed to give the same delivery rate with the dispenser held upright or inverted. Also, it may be designed to give widely different delivery rates with the same dispenser held upright or inverted during spraying. This is accomplished by selection of orifices of suitable sizes."

Although the sketch Mr. Sharpless used indicated an internal slide, (Figure I), he reported that external slides or "other suitable devices" could be used to open and close the orifice.

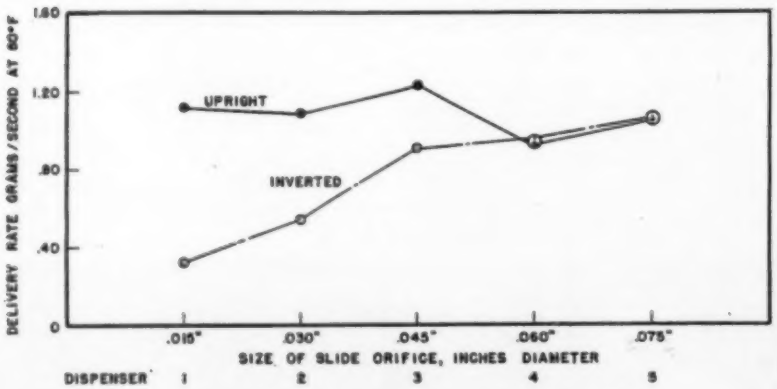


FIGURE II; DELIVERY RATE WITH EXPERIMENTAL "SA" VALVES (SLIDE ORIFICE VARIED, BODY ORIFICE .0625" DIA.)

USING a graph (Figure II), Mr. Sharpless illustrated how the delivery rates of the valve are similar, no matter whether the dispenser is used upright or inverted. In Figure II, five handmade valve samples were used (numbers 1-5), with the body orifice at 0.0625" diameter, and the slide orifice varied from 0.015" to 0.075" in increments of 0.015".

"Companion points on the two curves in Figure II show the average delivery rate with the same dispenser sprayed upright and inverted. Each point is based on eight determinations at 80°F. The aerosol solution consisted of a 15% by weight deodorized base oil, 42.5% P-11, and 42.5% propellant 12. The formula has a pressure of about 35 psig. at 70°F."

Mr. Sharpless pointed out that, with the body orifice held at a constant size, delivery rates in the upright position ranged from about 1.0 to 1.2 grams per second. "With the dispenser sprayed in an inverted position, use of the smallest size slide orifice (0.015") resulted in about a three-fold reduction in the delivery rate. By increasing the size of the slide orifice, approximately equal delivery rates were obtained with dispensers 4 and 5, which have respective slide orifices of 0.060" and 0.075"."

(*Continued on Page* 59)

Tom Wallace and Joseph Tomlinson (General Chemical), Al Pero (Fluid Chemical), and Norman Odell (G. M. Basford). Grant Hoyt (Aerosol Research), A. Williams (Shell Chemical) and Don G. Holson and Roland Rhodes (Real-Kill). J. M. Russ and S. M. Livengood (Carbide), and R. G. Hill (Mojonnier).

CSMA Meeting Report

Aerosol Protective Coatings

NITROCELLULOSE-ALKYD coatings are the most suitable of all protective coatings for aerosol use, declared Ludwig J. Hecht, of Lenmar Lacquers, Inc., Baltimore, speaking on "Aerosol Protective Coatings" to the Aerosol Division of the CSMA. Supporting his statement, Mr. Hecht said:

"Comparing a high quality lacquer enamel with a high quality alkyd enamel, a nitrocellulose-alkyd lacquer, has, besides its main advantage of rapid drying, the following advantages:

"From the nitrocellulose component: lacquers gain greater toughness, since nitrocellulose is a tough plastic. They further have greater hardness, better washability, longer wear, better block-and-print resistance soon after application of coating, better color retention; and, last, but not least, a second coat may be applied soon after the first coat.

"From the alkyd part the nitrocellulose enamel gets good film build-up, high gloss, and improved adhesion."

Mr. Hecht voiced a warning to the prospective paint packager about some of the possible pitfalls to be encountered with aerosol paints. "Aerosol coatings need special formulation, mainly with regard to solvent set-up. Propellants become part of the formula and, since the solvency behavior of a chloro-fluoro hydrocarbon is quite different from that of the solvents usually used in surface coatings, special allowances have to be made to accommodate the unavoidable presence of this type of propellant. Formulating also has to take care of the fact that coatings in aerosol containers are often used by inexperienced operators.

"Fast drying is of the essence to avoid runs on vertically sprayed surfaces, and still enough slow drying solvents have to be present to afford a good afterflow — resulting in a smooth surface, free of streaks, orange peel, and the like. Of course, good hiding power of pigmented coatings is essential to prevent the deposit of too heavy a film. Generally, it can be stated that formulation has to be done with great care. The usefulness and useability of any raw material has to be tested thoroughly before putting it into production use. Experience has shown that a seemingly identical raw material to the one used in a successful formulation will cause trouble when, for instance, it is brought from another raw material supplier.

"No formulation should be released for production unless it is tested thoroughly and aged in aerosol containers for at least a half year.

. . . "The biggest troublemaker is, or rather was, the presence of moisture in the packaged can, causing corrosion of the can and chemical changes of certain pigments. This, in turn, caused thickening up to gelling of the can contents, or sometimes precipitation of the pigment and film-formers."

The major portion of Mr. Hecht's paper was a discussion of the characteristics of various varnish and lacquer types of aerosol spray coatings. To differentiate between these interchanged terms, he defined varnish as "any coating which dries mainly by oxidation or polymerization, or both." Lacquers were defined as "those which dry by solvent evaporation only."

Among the varnishes, he declared, the "so-called synthetic or alkyd resin type are the most important ones for aerosol packing. . . . A good alkyd finish has very good durability, luster, flow, and many other desirable features."

Among the lacquers he declared nitrocellulose to be the most important, mainly because of its compatibility with the other film formers, such as resins and plasticizers. In this category he pointed out that acrylics, another aerosol type used widely in clear coatings, "have their main limitations in that they will not allow high nonvolatile contents and do not have the hardness of nitrocellulose lacquer;

(*Continued on Page* 60)

Improved Method of Aerosol Loading is Announced by DuPont and G. Barr Research Chemists

AN improved method of aerosol loading, in which a mixture of the concentrate and a portion of the propellant are loaded at atmospheric pressure and ambient temperature; and the balance of the propellant is pressure loaded, was reported in a joint paper by F. A. Bower, of DuPont's "Freon" Products Laboratory, and R. G. Appenzeller, of G. Barr & Co. The paper, entitled "An Improved Method of Loading Aerosol Containers," was read by Mr. Bower.

The advantages of the new method are reported to be many. "Since all operations are conducted at ambient temperature, the problems connected with refrigeration are eliminated. Purging is effected automatically by the vaporizing propellant, thus eliminating the troublesome purging step of pressure filling. Any propellant which can be added to the open container will reduce the quantity of the propellant to be loaded through the valve, thus relieving a part of the time disadvantage of pressure filling."

Thus, according to Mr. Bower, the chief disadvantages of both the cold and pressure filling methods would appear to be eliminated. He summarized these as follows: "Cold filling is limited to products which have reasonable viscosities at low temperatures and will not be adversely affected by refrigeration. A second disadvantage is the rather expensive necessity of removing heat from the formulation immediately after loading. The purchase and maintenance of the refrigeration equipment is another disadvantage of cold filling.

"Pressure loading avoids the problems associated with refrigeration in cold filling but presents two new problems in their place. The pressure filling procedure is complicated by the introduction of a third step—purging the air from the aerosol container prior to loading the propellant. The second disadvantage is the relatively long time required to load the propellant through the aerosol valve."

Mr. Bower reported that this necessity of purging the air is most acute when formulations containing a high proportion of propellant are loaded. He warned that excessive pressures resulting from trapped air in the container can cause the total pressure to "exceed the safe and legal limits for the aerosol package."

He described preliminary experiments designed to determine whether it is possible to automatically purge the air by loading a mixture of concentrate and propellant having sufficient vapor pressure to evolve small amounts of propellant vapor during loading. Propellant 11, "Deobase," and absolute ethanol were used as "model concentrates," with equal volumes of each concentrate and propellant 12 being used. 30 seconds were allowed to elapse between filling and capping the container.

"Table I shows that the presence of a volative component in the concentrate has the desired effect of removing much of the air from the container." The table indicates, according to Mr. Bower, that "the presence of a volatile component in the concentrate has the desired effect of removing much of the air from the container," and that propellant 11 "itself makes a significant contribution to the purging process."

Further tests were conducted with a model insecticide formulation (15% "Deobase," 42.5% propellant 12 and 42.5% propellant 11) and a model hair-spray formulation (30% absolute ethanol, 35% propellant 12 and 35% propellant 11), and here too it was demonstrated "clearly that premixing the concentrate and propellant 11 contributes to the effectiveness of purging and provides an excellent way to introducing significant quantities of propellant at atmospheric pressure." Mr. Bower added that the presence of some propellant 12 is desirable, mainly to provide the necessary pressure for rapid, efficient purging.

The DuPont and G. Barr researchers then investigated the effect of loading time on purging efficiency, and discovered that there is no significant difference in pressures as the loading time is varied. "It appears that purging is essentially complete immediately after the liquid is loaded. While the increasing pressure trend of the ethanol-based formulation is not considered significant, it may be an indication that the lower time limit for this type of formulation is in the vicinity of five seconds."

Mr. Bower reported that further tests indicated "ordinary variations of the ambient temperature of the concentrate will not have a significant effect on the effectiveness of the purging step."

Propellant losses, an important consideration in all aerosol loading, were reported to be relatively small. "Average losses in this operation amount to approximately two grams per can during the five-second loading cycle. Most

of these losses occur during the actual loading when the propellant is actively boiling off. These losses are related to the violence of loading, which affects the rate at which the propellant vapors are released from the liquid, and to the proportion of propellant 12 in the propellant-concentrate mixture. Losses which occur after the loading step are small since active boiling ceases immediately after the liquid flow is stopped. From the quiescent liquid, the losses amount to about one-half gram per can per minute."

Frothing was a problem, Mr. Bower reported, especially in high speed loading of a concentrate propellant mixture containing 10% propellant 12. "It has been possible to load a mixture of 35.5% hair spray concentrate, 61.5% propellant 11, and 3% propellant 12 at the rate of 130-140 grams per second into six-ounce cans without incurring losses from frothing. Where the end use of the product will permit, frothing can be further controlled by adding approximately 0.05% of an antifoaming agent to the formulation. If a smaller volume fill is desired, the filling rate can be increased without causing frothing."

He cautioned that there are still mechanical problems to be solved. "It may be necessary to provide filling bowls that can withstand 5-10 psi pressure to avoid excessive losses from the concentrate-propellant mixture. Large smooth filling nozzles should be used to avoid the turbulence which contributes to the frothing problem. By these minor modifications the major problems connected with this loading technique can be eliminated."★

TABLE I
Purging of Aerosol Containers
100 ml. "Concentrates" + 30 ml. Freon 12

		Pressure (Psig. at 70°F.)		
Concentrates	*No. Purging*	*5% Propellant 12*	*9% Propellant 12*	*Cold Load*
Freon 11	21	19	17	18
Alcohol (SD 39C)	48	42	36	29
Deobase	44	37	31	26

Changes at Olin Mathieson

The Insecticide Division of the Olin Mathieson Chemical Corp., New York, recently named Dr. Alfred Weed as promotion manager of household insecticides. His headquarters will be located in Asheville, N. C.

At the same time the division announced the appointment of C. M. Norton as assistant manager of the Insecticide Products Department, where he will assist G. D. Baerman, manager of the department. D. M. Malcolm has been advanced to manager of customer service and Paul Williams will be manager of insecticides sales for the Midwest territory.

Top Row: Walter Beard (Risdon), Tom Wallace (General Chemical), and Harvey Tull (Crown Can). Roy Hagelin (Ungerer), Mrs. and Bob Sharp, (Prentiss). Tom Johnson (DuPont), Dick Burke (Tube Manifold), and H. R. Shepherd (Aerosol Techniques).

Bottom Row: Ken Leghorn (Sun Tube), Herbert Fine (Plasti-Kote), and E. F. Helfer (Powr-Pak). Mr. and Mrs. William Bien (*Fort Lauderdale Daily News*), Dave Tillotson and Mrs. and Mr. Frank Lucard (all of Pennsalt). Gilbert Miles (Colgate-Palmolive), Bob Abplanalp (Precision), and R. G. Hill (Mojonnier Associates).

Resistance Problem, Insect Repellents, Sesoxane, Discussed Before Meeting of CSMA's Insecticide Division

THE insect resistance problem is growing in Florida, William A. Simanton, of the University of Florida Citrus Experiment Station, Lake Alfred, Florida, told the Insecticide Division of the CSMA at the 44th annual meeting in Hollywood Beach. To cope with the resistance factor, he suggested, household sprays, particularly aerosols, are becoming an increasingly important factor.

The problem is particularly important with mosquitoes, Dr. Simanton pointed out. In some areas the chlorinated hydrocarbon sprays no longer appear effective against adult mosquitoes, and area fogging operations by the state have been seriously hampered by unfavorable spraying weather and the carrying in of new infestations of adults by breezes. "Considerable reliance must still be placed on household space sprays, window screen treatments, and personal repellents. Tourists stopping at motels on the Florida Keys in the summer months are frequently handed an aerosol bomb or hand sprayer with their room key. Many motel keepers also fog the premises daily with a quick knock-down insecticide applied by a thermal aerosol attachment to their gasoline mower."

He reported that the newer repellents for personal protection, particularly diethyl toluamide, are finding increased use in Florida against biting stable flies, deerflies, chiggers, and ticks, as well as mosquitoes; but cited the need for development of effective space repellents against the Drosophila vinegar flies and the Hippelates eye gnats.

Resistance to certain leading insecticides is also manifesting itself in German roaches, Dr. Simanton pointed out. Malathion and "Diazinon" sprays are being relied on where this species is showing resistance to chlorinated hydrocarbon insecticides, he added.

"Eventually many of our economic insects will become immune to large groups of insecticides developed in the post-DDT era. Since resistance becomes an inherited trait, it is apparent that those pests capable of producing many generations a year and those that are almost universally subjected to frequent spray exposures will acquire the tolerance first. Areas where the most thorough and complete control has been effected in the past few years will probably be those where the problem will be the worst in the future, since a more rapid selection of resistant individuals has taken place. Research has shown that, where resistance starts to develop in a population, the rate of increase in resistance increases tremendously if successive generations continue to be exposed to the same type of insecticide.

"Since household space sprays are usually applied only to the local area, in many cases these do not have residual action. Thus it is not likely that household sprays have contributed greatly to this buildup of resistance.

. . . "Fortunately, the synergized pyrethrum insecticides which are used so extensively in the insecticide specialty industry continue to be as effective as formerly (in the majority of cases). This is encouraging in view of experimental evidence that such materials as lindane, "Diazinon," malathion, and even parathion are capable of causing resistance buildup in houseflies. These quick-action insecticides, together with the more effective repellents and perhaps products based on attractants or baits, may be expected to have an increasingly important role in the specialty field."

ANOTHER Florida researcher, Carroll N. Smith, of the USDA's Entomology Research Division, Orlando, described a whole series of current tests being conducted by USDA entomologists to determine the relative effectiveness of various insect repellents. He reported that the most effective materials recommended for application to the skin are the meta isomer of diethyl toluamide, and other substituted diethylbenzamides, ethyl hexanediol, dimethyl carbate, dimethyl phthalate, and Indalone.

Dr. Smith described the method devised in Orlando for testing repellents: "All new compounds are screened as treatments on cotton stockings against caged yellow fever mosquitoes (*Aedes aegypti*). A measured section of the narrow part of a nylon stocking is impregnated with 3.3 grams of the compound per square foot, applied in a 10% acetone solution. The following day an untreated nylon stocking is drawn over the arm, and a cotton stocking is drawn over the nylon, with the treated portion about midway of the forearm. The hand is protected by a heavy cotton glove, and the arm exposed for one minute in a cage of mosquitoes. If less than five bites are received, the stocking is aged and retested at weekly or semi-weekly intervals until five bites are received in a single one-

minute exposure. Compounds effective for more than 10 days are placed in line for further evaluation.

"Use of treated stockings for screening eliminates the necessity for expensive skin irritation tests with all the compounds, which would be necessary if screening were done by means of skin applications. Only the compounds effective for more than ten days are submitted for preliminary skin irritation tests by the Army Environmental Health Laboratory."

The Orlando research group also conducts tests of the effectiveness of various repellents against sweating, resistance to removal and wiping, removal by rinsing with water, and synergistic action.

"Tests of these types have shown diethyl toluamide to be outstanding as an all-purpose repellent, equaling or surpassing the repellents previously considered best against each species."

Synergistic activity of 1:1 ratios of Sexoxane - Methoxychlor on CSMA 51 house flies (average of 3 replicates)

Treatment	*% Knockdown in 30 minutes*	*% Kill in 24 hours*
Test I		
.05% Sesoxane	0	0
.05% Sesoxane .05% methoxychlor	91.3	90
.05% methoxychlor	60.7	36.6
Test II		
.07% Sesoxane	0	0
.07% Sesoxane .07% methoxychlor	97.3	97.3
.07% methoxychlor	82	49.3

LABORATORY evidence that "Sesoxane," Shulton's version of the new synergist developed by the USDA, which has been demonstrated to be highly effective with pyrethrins, also improves the insecticidal efficiency of methoxychlor was presented to the Insecticide Division by Dr. H. E. Fairchild, of DuPont's Grasselli Chemicals Dept., Wilmington.

Dr. Fairchild described laboratory experiments in which methoxychlor was synergized at various rates with "Sesoxane," which is the trade name for 2-(2-ethoxyethoxy) ethyl 3,4-methylene-dioxyphenyl acetal of acetaldehyde. Experimental applications provided excellent control of German roaches for which methoxychlor alone has not been considered effective, and substantially improved control of the Roberds strain of house flies which is resistant to chlorinated hydrocarbons.

In addition, the synergist improved methoxychlor control of black carpet beetles, confused flour beetles, and granary weevils.

All the treatments reported by Dr. Fairchild were applied as contact sprays of acetone solutions, and conclusions were based on per cent kill in a 24-hour period.

For example, in one test, a formulation containing one per cent "Sesoxane" and 2% methoxychlor gave 98.3% kill of German roaches in 24 hours, compared with 1.7% kill for a one per cent solution of "Sesoxane" alone and 13.3% for a two per cent methoxychlor solution.

If this laboratory work with contact sprays is confirmed for residual effectiveness, and developed commercially, he pointed out, it means a substantial advancement in combining activity against both flying and crawling insects in one formulation for household use. Both methoxychlor and "Sesoxane" are of an extremely low order of toxicity to men and animals.

Methoxychlor is an analog of DDT which was introduced commercially as a residual insecticide by the Du Pont Co. over a decade ago, and has been widely used in agricultural and household insecticide formulations. "Sesoxane" is chemically related to synergistic compounds in sesame oil, and "Sesoxane" itself has been tried successfully as a synergist for pyrethrins. The compound was discovered by Dr. Morton Beroza of the U. S. Department of Agriculture, and is now being manufactured in pilot plant quantities by Shulton, Inc., Clifton, N. J.★

Franklin Nelson Retires

Franklin C. Nelson retired Jan. 1 as senior technologist for Essoc Standard Oil Co., Linden, N. J. He had been with Standard Oil for 31 years and was in charge of the aerosol and specialty laboratory. He had been associated for a number of years in much of the early developmental work on "Flit."

Ray Lavendier (Bristol Flowed Gasket); Phil and Mrs. Meshberg (Emson Research), and Davis Guttman (Argentina rep., Fairfield Chemical).

Mr. and Mrs. John Rodda (Fairfield Chemical). John Marana and Peter Clapp (Western Filling), flank Don O'Brien (Colgate-Palmolive).

Top Row: R. A. Fulton (USDA), N. J. Gothard (Sinclair), A. O. Samuels (Connecticut Chemical Research), and Ken Nash (Olin Mathieson). Joe Fredette (American Can), Joseph Fuld (Fuld Bros.), and George Hartz (Olin Mathieson). Bill Scheck (Builders Sheet Metal), E. G. Young (DuPont), Don O'Brien (Colgate-Palmolive), and Jack Campbell (Continental Filling).

Bottom Row: Bill Cunliffe (Stalfort Pressure-Pak), Mrs. and Mr. R. C. Barker (Gulf Oil); and Dick Kraus (Stalfort). Mrs. Philip Hauser (Root-Lowell), A. G. Grady (Sinclair Refining), Mr. and Mrs. Wiley Pickett (Pennsalt Chemicals), and John Stoddard (Prentiss Drug & Chemical). Steve Murphy (Continental Can), Win Reed (Reed Research), Morris Root (G. Barr) and Jack Wallace (Continental Can).

CSMA Meeting Report

Silicones Finding New Aerosol Uses

SILICONES are finding increased use throughout the aerosol industry, declared Thomas H. Reilly, of General Electric Company's Silicone Products Department, Waterford, N. Y., in a paper "Silicones in Aerosols," delivered before the Aerosol Division. The paper was prepared by Mr. Reilly and Donald V. Brown, also of General Electric's Silicone Department.

Silicones are particularly useful in pressurized products, Mr. Reilly pointed out, because they possess the following properties:

1. Low and high temperature stability.
2. Outstanding release from sticking.
3. Excellent resistance to ozone and weathering.
4. Good electrical characteristics.
5. Exceptionally high water repellency.
6. Unusual inertness.

"They are generally very soluble in the fluorocarbon and hydrocarbon propellants as well as in ether, aliphatic, aromatic, and chlorinated solvents. Certain of the silicone fluids are also soluble in alcohols. The fluid and resin solutions are readily emulsifiable with standard emulsifiers and emulsification equipment can be incorporated in water base products."

Mr. Reilly declared that silicone formulations have little or no effect on black plate, tinned, or resin-lined cans; on nylon and brass valve parts; on polyethylene dip tubing; or on most of the commonly-used gasketing materials.

As a prime example of the potential for silicones, the General Electric researchers cited the cosmetic field, particularly applications in hand lotions and hand creams, sun tan sprays, and hair sprays.

"At present most of the major cosmetic companies have a silicone hand cream or lotion in their line. Silicones give excellent protection against a wide variety of water-borne irritants, acting as an invisible glove. Their low surface tension imparts a smooth velvety feel to creams and lotions. Two to 10% silicone is the range most commonly used in these products.

"Annual retail sales of hand creams and lotions reached about $41 million in 1956. To date aerosol products have made little penetration in this

part of the cosmetic market, but the convenience and consumer preference for both push-button products and silicone hand lotions provides a combination which could result in a great future for aerosol hand preparations containing silicones."

Mr. Reilly pointed out that silicones are found today in a substantial majority of the leading polishes. "Auto and furniture polishes usually take the form of wax dispersions in solvents (such as mineral spirits) with the proper amount of silicone added for maximum ease of buffing and highest gloss. If preferred, instead of using a conventional spray nozzle the polish can be formulated for dispensing from a foam valve."

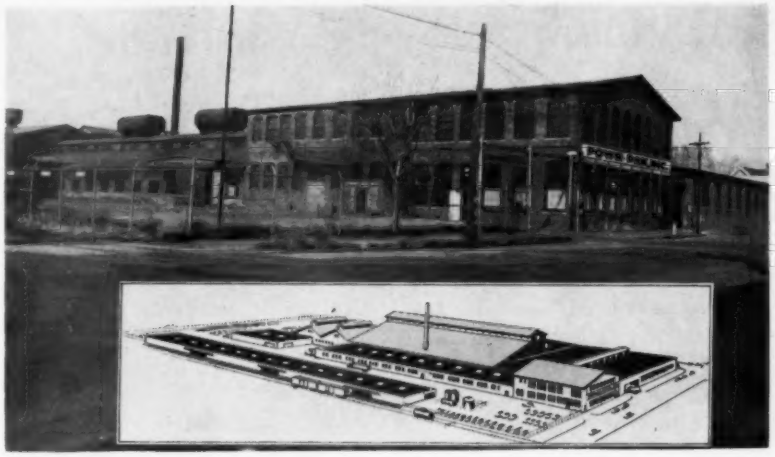
He described how silicones can give a cleaned surface a high polish and make buffing easier in window cleaners and household cleaners; and how they enhance gloss, increase water repellency and reduce tackiness, in shoe polishes. In dielectric greases, the silicones are finding use in protective coatings for ignition systems and battery terminals, lubricants for door and trunk gaskets, cables, fan belts, etc. "These lubricants are virtually unaffected by temperatures from —35°F. to +325°F. The spray provides many conveniences including uniform and economical coverage and ability to treat complex shapes and hard-to-get-at places."

One particularly promising use for silicones in aerosol products, Mr. Reilly declared, is for mold releases, which make use of the silicones' low surface tension, incompatibility, heat stability, and lack of carbonization. "Satisfactory formulations may contain from 2 to 5% silicone, with the balance made up of solvents and propellants. The aerosol package has proven to be ideally suited for use in small plastics and rubber molding shops where elaborate spray systems are not economical."

Turning to possible specialized aerosol uses for silicones, Mr. Reilly suggested a silicone aluminum paint, which could be applied to prevent rusting of automobile mufflers and tail pipes. He reported that a paint containing 25-35% silicone resin plus

(*Continued on Page 60*)

Powr-Pak Expands, Moves to New Quarters



POWR-PAK, Inc., Bridgeport custom filler, occupied its newly-acquired quarters at 145 Howard Avenue, Bridgeport on Jan. 1. The move was part of a general expansion of its staff and facilities to keep pace with its growing volume, according to E. F. Helfer, president.

The building is a 110,000 square foot factory once occupied by Precision Steel Co., and is believed to provide Powr-Pak with the "largest floor area space in the aerosol industry." The office and laboratory areas are air-conditioned and the entire brick structure is equipped with a sprinkler system.

Powr-Pak will maintain four separate aerosol production lines, with a total daily production of 350,000 units. Two special aerosol areas, one expressly for pharmaceuticals and the other for food filling, are planned. Both will be completely enclosed and finished in white to meet all government specifications. The filling equipment for both lines will be entirely of stainless steel and chrome plate.

The new plant boasts excellent shipping and handling facilities. It is located on a railroad siding and has four separate truck shipping platforms and three receiving docks. Storage areas will accommodate the warehousing of five million empty cans, as well as an additional one million filled containers.

Construction of the new pharmaceutical and food-filling lines began late in December, with production from these lines scheduled for sometime in January. The plant will also contain one of "the largest, most completely staffed, and fully-equipped" aerosol research laboratories in the industry.

Until the Howard Avenue plant is completed, uninterrupted production will be maintained in Powr-Pak's North Avenue plant. Plans call for moving one complete unit at a time, to minimize loss of production during the transfer.

•

Predict Aluminum Rise

A new era in the aluminum industry, a "break-through" to mass production techniques, was predicted last month by Richard S. Reynolds, Jr., president of Reynolds Metals Co., Richmond, Va.

"The present over-supply of aluminum is not a liability but an asset," he told the 46th annual meeting of the Investment Bankers Association of America at Hollywood Beach, Florida. The meeting was held the week prior to the CSMA meeting at the same hotel.

"The challenge of mass production has always been with us," he declared, "but until today we have lacked the metal to take advantage of the tremendous opportunities it offers us."

While the national economy is expected to double by 1975, he said, "we expect the use of aluminum to show a five-fold increase — from two million to ten million tons." A good portion of this increase, he predicted, will come from the packaging field.

Dallas Survey Reveals Consumer Buying Trends for Leading Aerosol Brands

THE second annual "Consumer Inventory and Products Availability Audit," published recently by *The Dallas Morning News*, Dallas, Texas, reveals a number of interesting figures about consumer purchases of aerosol products. The survey, one of a series conducted in a number of major cities by Dan E. Clark II & Associates, Portland, Ore., is studied closely by aerosol marketers for possible buying trends in the top ten aerosol brands.

The 1957 audit covered not only Metropolitan Dallas (population 823,900) but what is known as the "combined city retail trading zone" (population 1,436,500). It was accomplished by personal interviews in a sample of households "selected by random methods which eliminated the interviewer's judgment or preference as a means of selection." A total of 598 interviews was made in the retail traiding zone, and 900 interviews were completed within the city zone sample.

Of all the many products included in the survey, four (and one more additional) fall into the category of aerosols: shave cream, hair fixatives, household air deodorants, insecticides, and personal deodorants (which were not broken down as to dispensing method).

Brushless shave creams (in pressurized cans) recorded a considerable increase in "households buying the product." In 1957 the figure rose to 30.1%, against only 25.5% in 1956. "Brushless shave cream in tube or jar" appears to have accounted for much of the aerosol gains, since in 1956 this category was purchased in

(*Continued on Page* 58)

BRUSHLESS SHAVE CREAM — In Pressurized Can

	Total Home Cooking Households	Households buying this product
1957	407,300	30.1% or 122,597
1956	397,200	25.5 or% 101,286

Had brand bought last in home 27.0%

Brand(s) Bought Last

TOP TEN BRANDS

	1957	1956
1. Rise	20.1%	18.3%
2. Palmolive	20.0	27.7
3. Mennen	15.1	9.4
4. Colgate	9.4	6.4
5. Aero-Shave*	6.8	7.7
6. Old Spice	4.9	2.8
7. Gillette	3.7	1.1
8. Avon	3.1	3.5
9. Barbasol	1.8	*
10. Burma Shave	1.6	*
All Others	9.4	8.2
Brand Unknown	4.7	11.8
	100.6	

Product Availability During This Survey

GROCERS Indep.	GROCERS Chain	DRUG STORES Indep.	DRUG STORES Chain
%			
34	A P C E M S T W	91%	S W WD
21	A P C E M S SE T W	79	S W WD
16	A P C E M S SE T W	85	S W WD
9	E M S SE T	71	S W WD
43	A P C E M SE T W	53	S W WD
2	A P C E T W	68	S W WD
11	M S SE T W	68	S W WD
—		—	
	S T	41	S W WD
4	E M	53	S W WD

Among grocery chains—"AP" is Atlantic & Pacific Tea Co.; "C" is Cabell Dairy Stores; "E" is Evans Food Marts; "M" is Minyard Stores; "S" is Safeway Stores; "SE" is 7-11 Stores; "T" is Tom Thumb Stores; "W" is Wyatt Food Stores.

INSECTICIDES

Total Home Cooking Households	Households buying this product
407,300	64.2% or 261,487

Had brand bought last in home 53.1%

Brand(s) Bought Last

TOP TEN BRANDS

	1957	1956*
1. Real-Kill	34.5%	
2. Gulf Spray	19.6	
3. Cook-Kill	5.3	
4. Black Flag	4.3	
5. Raid	3.3	
6. Stanley	2.6	
7. Mighty Lite	1.1	
8. Aer-a-sol	0.5	
8. Vaporettes	0.5	
10. D.D.T.	0.4	
All Others	19.8	
Brand Unknown	9.0	
	100.9	

Product Availability During This Survey

GROCERS Indep.	GROCERS Chain
76%	A P C E M S SE T W
66	A P C E M S SE T W
9	A P C E S
49	C E M S T W
17	A P E M S SE T W
—	
5	E M SE W
1	
3	E M W
1	

HAIR FIXATIVES

	Total Home Cooking Households	Households buying this product
1957	407,300	42.3% or 172,288

Had brand bought last in home 35.3%

Brand(s) Bought Last

TOP TEN BRANDS

	1957	1956*
1. Revlon	38.3%	
2. Helene Curtis	35.4	
3. Avon	3.8	
4. Nestlés	3.1	
5. Breck	2.6	
6. Tweed	1.5	
6. Style §	1.5	
8. Helena Rubinstein	1.1	
9. Charles Antell	1.0	
9. Stanley	1.0	
All Others	8.8	
Brand Unknown	2.3	
	100.4	

Product Availability During This Survey

GROCERS Indep.	GROCERS Chain	DRUG STORES Indep.	DRUG STORES Chain
%			
11	A P C E S T W	73%	S W WD
26	A P C E M S SE T W	85	S W WD
—		—	
1	E W	44	S W WD
—	A P E T W	53	S W WD
1	E T W	47	S W WD
—		35	S W
—	E	35	S W WD
—		—	

Among drug-store chains — "S" is Skillern Drug Stores; "W" is Walgreen Drug Stores; "WD" is Ward Drug Company.

Aqueous-Based Aerosols Discussed in DuPont Paper At SCC Meeting in N. Y.

"THE successful formulation of aqueous-based aerosols in the future should lead to a much wider variety of products than are now possible and should result in a considerable expansion of the aerosol market," declared P. A. Sanders, of DuPont's "Freon" Products Laboratory, Wilmington, in a paper delivered to the annual meeting of the Society of Cosmetic Chemists at New York's Hotel Commodore on Dec. 10.

Mr. Sanders outlined some of the advantages and disadvantages of the leading aqueous based emulsion systems: three phase, oil-in-water, water-in-oil, and propellant-water emulsions.

For the three phase system, he reported, use of the denser fluorinated hydrocarbon propellants necessitates the careful adjustment of the length of the standpipe to achieve maximum discharge of the aqueous contents. "Also, the container cannot be used in the inverted position without a standpipe. These two disadvantages can be eliminated by the use of lighter hydrocarbon propellants, which float on top of the aqueous phase. The use of such propellants, however, introduces the hazard of flammability.

"Active ingredients that have appreciable solubility in the propellants as well as water will distribute themselves between the two phases. It is necessary, therefore, to compensate for this in formulating." Mr. Sanders also cautioned about possible changes in the distribution ratio, which could result in the concentration of the active ingredients in the aqueous phase.

He pointed out that oil-in-water emulsions in the form of shaving lathers have been on the market since 1950 and reported that a series of these types of formulations, having very low concentrations of propellant (usually less than 5%) have been developed recently. Mr. Sanders declared that, through use of such auxiliary solvents as ethyl alcohol, almost "transparent" systems are obtained in which no creaming occurs during standing, and shaking of the product before use is not necessary.

For the water-in-oil emulsions, he said, "In practically all cases, changing from standard actuators to mechanical break-up actuators will produce a much finer spray. In many instances, emulsions that stream with the standard actuator will spray with the mechanical break-up type."

Because the water is dispersed throughout the propellant, when the emulsion is forced through the actuator, Mr. Sanders pointed out, the propellant evaporates, leaving the water droplets, the emulsifying agent, and any auxiliary solvents present. "Since very little propellant is dissolved in the aqueous droplets, there is less tendency for the vaporizing propellant to cause foam formation with the droplets. Likewise, since the emulsifying agents suitable for water-in-oil emulsions are generally oil soluble, they are usually poor foaming agents for aqueous solutions."

Mr. Sanders attached particular importance to the selection of the most satisfactory emulsifying agent, terming the polyglycerol esters of the fatty acids generally the most satisfactory. He said that selection of any one of these is dependent on the stability of the emulsion, the lack of foaming with the sprays, and the lack of corrosion resulting from the water-in-oil emulsion in metal containers.

Turning to propellant-water emulsions, he declared that "It is probably only a question of time until a satisfactory agent for these systems is found."

Mr. Sanders reported that fairly satisfactory emulsions have been obtained by combining propellants 11 and 12, and that the spray characteristics may be varied from very fine to very wet by varying either the 12/11 ratio or the propellant/water ratio. "Increasing the proportion of propellant 11 in the propellant mixture increases the stability of the emulsions and also the wetness of the spray."

HE reported that use of auxiliary solvents, such as odorless mineral spirits, has a number of advantages in the formulation of water-in-oil emulsions. They may increase emulsion stability, he said, or be used to dissolve the water-insoluble surface-active agent. When the latter is done, a water-in-oil emulsion is then prepared from the solvent by adding the water to the solvent.

"Propellant 12 / odorless mineral spirits/water emulsion systems produce nonfoaming sprays. The spray characteristics themselves may be varied over a wide range from very fine to very coarse by changing the propellant 12/solvent ratio."

Mr. Sanders, though acknowledging that odorless mineral spirits are usually the most satisfactory for obtaining nonfoaming sprays, suggested that such other solvents as cottonseed oil may be more desirable. "These form fairly good emulsions, but in some cases there appears to be a tendency to promote slight bubbling or foaming. This may be observed by shaking the emulsion and noting its tendency to foam."

He reported a general lack of container corrosion for the water-in-oil emulsions, and that pressures are "essentially those that would be obtained without the water present. . . . The pressure obtained with a propellant water emulsion is substantially the pressure of the propellant alone, plus any air that is entrapped during

(*Continued on Page* 52)

TGA, APMA Hold Meetings in New York

Water-soluble Resins, Patent Problems, Highlight Program's Technical Papers

TWO leading industry trade groups, the Toilet Goods Association and the American Pharmaceutical Manufacturers Association, meeting at New York's Waldorf-Astoria Hotel early last month, heard papers outlining more effective raw materials for use in their industries. The meetings were held Dec. 9-10.

"Polyox", the water-soluble polyethylene oxide gums introduced by Union Carbide Chemicals Co., in November (*Aerosol Age* — December) were reported on before the Toilet Goods Assn. by Lloyd Osipow, of Foster D. Snell, Inc., and Lester D. Berger, Jr., of Union Carbide Chemicals, in a paper entitled "Polyethylene Oxide Gums in Toilet Goods." Though largely devoted to a discussion of use of the oxide gums in soaps, it was reported that toothpastes, shampoos, shaving preparations, and cosmetic creams and lotions also benefit from the enhanced lubricity imparted by these gums. "Mouth feel imparted to toothpastes containing these water-soluble polymers is usually pleasant," it was declared.

The defoaming efficiency and physiological aspects of silicone defoamers was discussed by R. C. Gergle, W. T. Gregory, and C. W. Todd, of the Dow Corning Corp. They reported that only a few parts per million of the silicones control normal foam, and that toxicological inertness has been established by laboratory feeding tests and by controlled ingestion by humans.

Of the seven papers presented, the only other one of interest to the aerosol industry was "The Effect of Creams and Lotions on the Moisture Retention of the Skin," by C. Fox and D. H. Powers, Warner-Lambert Pharmaceutical Co. They reported that the water content of the stratum corneum plays a prime role in determining the softness and flexibility of the skin.

The paper described a laboratory study undertaken to measure the effects of various types of materials, such as fats, oils, waxes, esters, humectants, wetting agents, and emulsifying agents on moisture retention by the skin. "In these experiments a simply-designed moisture collecting chamber measures the moisture loss of the skin surface. By applying thin films of test materials to a small area of the inner forearm and using an adjacent untreated area as control, it has been possible to measure the relative efficacy of these materials in retarding or accelerating moisture loss from the surface of the skin."

A HIGHLIGHT of the American Pharmaceutical Manufacturers Association meeting was an address by L. B. Pinkerton, vice-president of White Laboratories, Inc. Mr. Pinkerton declared that a billion-dollar market in over-the-counter ethical drug products within three to five years is not at all "far-fetched."

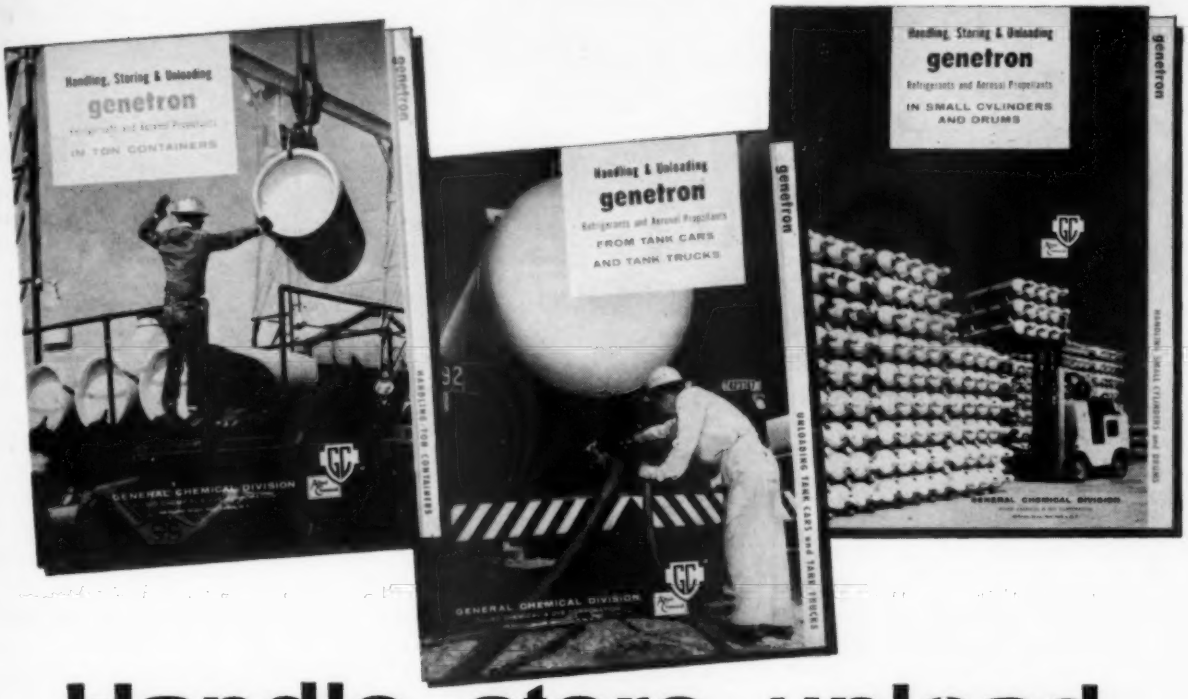
He called this particular market largely "unexplored and unexploited" and said that there is hardly a pharmaceutical manufacturer today who does not already have one of these items in his line. He cited a steady rise in over-the-counter items released by the FDA, pointing out that this is an indication that the attitude of physicians toward merchandising of non-prescription items has changed in recent years.

The subject of patents came in for considerable discussion at the APMA meeting. The association president, Francis S. Brown (who is also president of the Schering Co.) attacked "politico-reformers" for their attacks on the patent system, which he said "for 150 years has done more to stimulate research and promote discovery of new advances than any other incentive." Dr. Karl W. Eishold, director of the patent department of Farbwerke Hoechst A. G., Frankfurt, Germany's leading aerosol propellant manufacturer, told the group that for years interests in Germany have been working for major patent law changes there, particularly in terms of claim patents.

He reported that Germany has no product patents for new chemical compounds, and that product imitators can undersell the original product because they have no research costs to defray. He cited the need for uniform international patent protection for new chemical compounds, but acknowledged that such protection should be sought on the national level until the international situation clarifies. He suggested that a revision of Germany's laws could bring about a similar revision in other countries.

Patents were also discussed at length in a paper by Eldridge Haynes, editor and publisher of *Business International*, who disclosed that a group of U. S. drug firm representatives had recently conferred with Italian drug officials about patent malpractices existing in Italy. He said some of these malpractices, including what he termed "frightful piracy" might be corrected after the next Italian elections, when the government there plans positive steps in the field.

Turning to the European Common Market, Mr. Haynes predicted that it would eventually mean a severe reduction in U. S. exports, but that this would be offset by expanded opportunity for foreign investment by American firms.★



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Pressure Packaging Overseas

Dr. Tom C. Clark, of Druk-Pak, Ltd., Zurich, reports that the European Common Market, with its favorable effects on the aerosol picture there, will begin within months.

THE European Common Market, about which we previously wrote some introductory words, comes closer to realization. Only Belgium and Luxembourg have yet to ratify (favorable action by both can be taken as a foregone conclusion) and the treaty then goes into effect immediately.

In a previous column we analyzed the goals and objectives of the treaty: the eventual elimination of all customs duties, trade restrictions, quotas, etc., among participating nations and their erection of a common tariff wall against outsider competition. We also analyzed the different classes of membership, dividing them roughly into "full members" (the original six: France, Germany, Italy, Belgium, Holland and Luxembourg), "associate members" (the Scandinavian and some Mediterranean countries), and "non-resident members" (the United Kingdom and territorial possessions of the original six). We told how the different membership classes would determine a nation's relations with non-members and its control over its own tariffs as against them, but would not affect the basic principle of no tariffs against other club members. As to the reduction of tariffs and the removal of trade restrictions, we described how this was to be gradually accomplished over a 12- to 15-year period, with the first 100% reduction —and the only one "across-the-board" —taking effect within 12 months after final ratification of the treaty. There is now every possibility this first reduction could go into effect January 1, 1959.

What we did not discuss (for want of space) was how this new European Common Market would affect Europe's new aerosol industry. What foreseeable changes would it make? To what extent would it harm or benefit the growing number of leaders and the suppliers of raw material and component parts (manufacturers of propellants, chemicals, containers, valves, loading equipment, etc.)? And finally, what might be its ultimate effect on the whole market for aerosol products?

THE seriousness with which some U.S. companies regard Europe's Common Market development, is evidenced by their purchase, within recent months, of factories and factory sites at advantageous locations in some of the original six countries. Also, European newspapers are commencing to blossom with want ads from American companies for engineers and trained personnel to staff and build these factories. It appears that far-sighted U.S. manufacturers are aware that they must produce in Europe if they want to retain their present market position. Non-producing European countries which join the club will have no duties on imports from other members and there will be a common tariff wall against outsiders, i.e., the U.S. The consequences will become clearer as we examine some of the problems of the raw material suppliers to our own aerosol industry.

Currently Europe has four propellant manufacturers, one each in Germany, France, Italy and the UK. Also, loaders in Belgium, Holland, Denmark, etc., now pay import duties on their propellant purchases. With the treaty in effect, these loaders will pay no duties on purchases from member country manufacturers, but would pay a duty on imports only from non-member countries. From our talks with loaders and propellant manufacturers, we know that U.S. propellant exports are not inconsiderable and that they have a fair share of the market, particularly in the non-producing countries. There is every likelihood that these U.S. producers will lose this business unless they move to produce themselves in Europe. But is there room for more propellant manufacturers in Europe?

Based on U.S. experience over the past few years (where we started with one, now have three, with a fourth in the offing) the answer would appear to be "yes." Assuming a common tariff wall effectively shuts out non-member imports, the increased demand would have to be met by European propellant producers, who are already faced with a constantly expanding demand in their own markets. The alternatives are either to have vastly increased production facilities from the present manufacturers, or new manufacturers must enter the

(*Continued on Page* 52)

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AEROSOLS in review

Insecticide Resistance a Growing Problem

THE development of resistance, particularly in house flies, has become a problem in all sections of the country, declared Herman O. Schroeder and Howard A. Jones, of the Fairfield Chemical Division of Food Machinery and Chemical Corp., in an article on "Household Aerosol Insecticides" in the December issue of *Soap & Chemical Specialties*.

The Fairfield researchers note that aerosols are required to meet only certain minimum standards of performance set by Federal agencies, and that performance is judged by comparing the finished formulations by use of standard test methods. "The laboratory strains of houseflies used in upholding these standards have been carefully protected through the years to reduce the possibility of their developing resistance to insecticides. Thus the performance of household sprays and aerosols is being determined on the basis of *susceptible* flies, whereas the public will expect these products to control strains which have almost certainly developed a marked degree of resistance."

The article describes a whole series of tests conducted by the Wisconsin Alumni Research Foundation on the Fowler strain of resistant house flies. In a summation of the results of the tests, the authors note the following:

"The results show that the Official Test Aerosol (OTA) and many aerosols now on the market give very poor results when tested against resistant house flies. Formulas containing DDT, methoxychlor, Perthane, and Strobane were included in these tests. A three-fold increase in dosage rate did not bring the performance of aerosols of this type up to standard requirements. On the other hand, formulas containing only pyrethrum synergized with piperonyl butoxide, at concentrations which gave good results against non-resistant house flies, also gave good results against the resistant strain at no increase in concentration or dosage rate.

"These results point up the necessity of formulating household insecticides so that they will control resistant insects. Since house flies and other household insects are becoming more generally resistant to insecticides, a reappraisal by industry of the adequacy of formulas now on the market becomes increasingly important."

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MORE than 100 different products are now being put up in aerosol cans, and most of them are little known to the consumer, writes M. J. Heffernan, of DuPont's "Freon" Products Division, in the December-January issue of *DuPont Magazine*. Much of his article is devoted to a summary of the recent DuPont surveys on pharmaceuticals, household, and personal products.

"Wherever aerosols had been tried they were the choice of the majority of women, no matter which of the 15 specific products they were asked about. In a number of cases, however, consumers hadn't tried aerosols because they didn't realize a particular product was available in that form."

As some candidates for little known aerosols, Mr. Heffernan suggests adhesive tape remover, athelete's grip spray, white sidewall tire cleaner, cookware spray (to prevent sticking of food), diaper freshener, dry fly spray for fisherman, dust repellent for furniture, suede refinisher, and several others.

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IN a brief article summarizing recent packaging developments in West Germany, the English trade paper *Packaging Review* charges that the addition of 100% to the cost of aerosol-packaged perfume has made the economical German reluctant to pay the extra cost; and "consequently aerosols for perfumery packing are not popular."

The article in the November issue of the *Review* is based on a report issued by the Export Services Branch of the Board of Trade on the packaging and presentation of British manufactured goods for the West German market. In what might be a reflection of the periodical's British point-of-view, the article declares: "It is thought that the explosive power of a bare glass aerosol, when dropped or damaged, will lead to its disappearance from the market."

"A few manufacturers of insecticides use aerosols of sheet metal which appear to add only about 50% to the cost; and they are consequently popular. An aerosol air-freshner, about six inches high and 1½ inches in diameter is offered at just under 5 Deutschmarks (about $1.25)."

•

DR. WINSTON H. REED, in his monthly column in the November *American Perfumer & Aromatics*, reports that difficulties with valve buttons and other small parts catching underneath the chain of the 130° water bath conveyor line, and cleanup problems due to rusting magnets, may be eliminated through use of a new heat test tank developed by the Wallace Co. in Bridgeport.

"The tank is of stainless steel, uses 4½-inch nylon flat top chain. All magnetic elements and driving parts

for the chain are located outside the tank. Water re-circulates from each end to overflow near the center for self-cleansing. Cans thus both enter and leave the bath through clean water. Any type of heat, such as steam, hot water, or electricity, may be used. The magnetic elements are strong enough to carry a six-ounce empty can submerged completely through the bath. Since the chain is light, one man can lift it and clean the trough. This system eliminates some of the sources of rust found in some conventional baths."

In the same issue of *American Perfumer*, another of the periodical's columnists, Jack Pickthall, gives a brief summary of a number of key patents in England pertaining to the aerosol industry. Included are the Zonite, Spitzer, Colgate, and other important "basic" patents.

•

AEROSOL paint filling at the Sargent-Gerke Co., Indianapolis, is the subject of an illustrated feature article in the Nov. 14 issue of *Paint, Oil & Chemical Review*. Such questions as the pros and cons of custom filling, cold vs. pressure filling, etc., are discussed fully in the article.

The principal reason advanced for Sargent-Gerke filling its own products is quality control. According to Fred W. Keuthan, Jr., vice-president, "Having our own packaging line completely integrates paint production and aerosol packaging under one roof. This assures the customer that good paint practices are being followed from start to finish, and that the paint laboratory control works constantly with the filling process."

The company's pressure filling line, which had been operating at the rate of 15 cans per minute, soon proved inadequate to meet the demands for the aerosol product. Addition of cold filling equipment has increased output to 60 cans per minute; and the company is currently anticipating a volume of about 1.5 million cans a year.

"The line is a combination cold and pressure fill setup. The original pilot pressure fill line was spread apart, and the necessary equipment for cold filling was dropped into place. In this way the equipment common to both types of filling is shared. When the line is being used for cold filling, the purger and pressure filling unit are deactivated by flipping a switch. When pressure fill is wanted, a second switch limits the refrigerating equipment and deactivates certain other items. The whole line was supplied by Mojonnier Associates."

As to the advantages offered by cold filling of paints, Sargent-Gerke technical personnel cite the following: "It permits the propellant to be introduced into the container through the large opening in the top of the can before the can valve has been crimped into place, the material that is cold filled does not require purging, and higher speeds can be achieved with cold filling." However, they add, "On extremely short runs involving only several hundred containers, or water base concentrate, pressure filling is always indicated."

After describing in detail both the cold and pressure filling equipment at Sargent-Gerke, the article reports on the company's special fast indexing drive unit which, "during pressure fill operations, reduces the travel time of the chain when the gassing head is lifted from the container. Another feature of this drive is the override timer mechanism which compensates for the fractional time differences of each particular valve on each container."

The article concludes by returning to still another reason for Sargent-Gerk's doing its own filling. "Distribution outlets can best be maintained by delivering a quality product and being able to replenish stocks promptly. Contracting for outside packaging, like any packaged service, makes the marketer dependent on the packager for quality and delivery."

•

THE potential for pressurized foods may be as high as 750 million units per year, declares Robert C. Webster, general manager of the Food Division of Western Filling Corp., in a technical article on "Pressurized Foods" in the December issue of *Modern Packaging*. The article contains more technical data than any

AEROSOL AGE

"BY GEORGE THESE FELLOWS SURE KNOW THEIR SEASONING!"

article on pressurized foods in recent months.

Mr. Webster points out that an important part of the food package is the actuator, and declares that most actuators currently employed in the aerosol field are limited for the food field because of too small orifice size and structure. "Currently existing actuators must be redesigned to be compatible with particle size, as well as to provide mechanical systems to break the product into a spray."

To solve the problem of evolving an actuator that will effectively and continuously break up such oil-base products as salad oils, he describes a new valve actuator (Figure 1) developed by Calmar Co. and Western Filling.

Turning to filling, Mr. Webster describes the filling of compressed gas propellant products. "The compressed gas is forced into the container through the valve, a certain percentage of the gas is dissolved in the product until equilibrium is reached between the pressure of the gas dissolved and pressure of the gas in headspace. When the valve is actuated, a certain proportion of product plus dissolved propellant is ejected from the container by force of the headspace pressure."

"As headspace expands there is a decrease in headspace gas pressure. To maintain the state of equilibrium in the container, there is then an expansion of the gas dissolved in the product. This condition of decreasing pressures continues until the contents are expended."

He advises a low solubility of the propellant in the product to avoid aeration, and cautions that the temperature of gassing has a noticeable effect on the solubility of compressed gases. "Due to the fact that many of the foods that will be pressure loaded will be filled at elevated or at room temperatures, it is felt that loading of the propellant at room temperature is more economically feasible. Another factor in favor of loading at room temperatures is the greatly increased viscosity of many products at refrigerated temperatures."

Mr. Webster reports that for a wide range of products that have a pH of 4.5 or less, heat treatment is required to prevent bacterial spoilage; while those with a pH *greater* than 4.5 usually require refrigeration.

"The application of chemical preservatives to insure sterility offers only limited application to the pressurized food field." Mr. Webster attaches considerable importance to the securing of data on container shelf life and performance, calling them the "governing factors in the success of the pressurized food field."

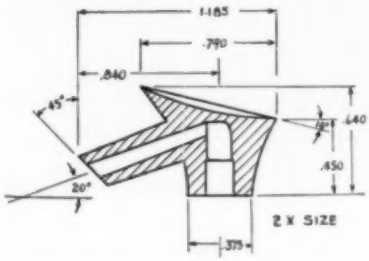

Figure 1. Calmar's new actuator for oil base products.

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THE possibility that foreign propellant manufacturers may be exporting quantities of fluorocarbon propellants to the U. S. is discussed in the Dec. 2 issue of *Chemical & Engineering News*. Though no conclusions are drawn, the magazine declares: "One opinion in the industry is that these imports represent for the most part shipments by a French manufacturer to a licensee using the French process in this country."

"Aerosol propellants are now made in the following countries: United States, Canada, Argentina, Brazil, Great Britain, France, West Germany, East Germany, Italy, Japan, Holland, Soviet Union, Spain, and Poland (projected)."

". . . Major interest in France is the plant of Societe d'Electrochemie, whose vapor phase process for fluorocarbons is being used by one manufacturer here."

The article then briefly outlines the picture in England, Canada, Argentina, and the U. S., and says that current low costs are expected to encourage development of other uses for the fluorocarbons in other chemical and plastics industries.

"Industry is now seriously studying the problem of productive capacity and future market potentials. While future projections of market researchers for aerosols are high, current capacity for propellant gases is considered adequate. Air conditioning is big Prospect No. 2. When Union Carbide first announced plans for a fluorocarbons plant last February, it estimated the country's total capacity at about 300 million pounds. Its new plant at Institute, West Va., will bring the total figure to around 350 million pounds."

•

AEROSOL information, particularly on filling equipment, is a too-closely guarded secret, charges I. F. Eyles in the November issue of the British trade publication, *Perfumery & Essential Oil Record*. "The aerosol trade being a small one, all of the technical knowledge is contained in a very tight circle and this knowledge is very jealously guarded," he declares. "Technical knowledge is only of use if it is soundly backed by practical experience and the aerosol trade is so young and small that one can hardly expect to find firms who are in a position to give advice on the best type of filling equipment just by picking up the telephone in the same manner as one would do in the case of ventilation, building, plumbing, etc."

He cautions that "fast-talking salesmen" too often cause a firm entering the aerosol filling field to buy either way over or way under their future requirements. He cites an example in which he questioned an equipment salesman after a firm had been quoted for equipment four times too small for its requirements. "The person who was handling the project for the vendors of the equipment was totally ignorant of the specific gravity, specific heat or vapor pressures of the everyday propellants, to say nothing of the difference in requirements of propellant/concentrate mixtures."

Mr. Eyles points out that the man who usually wields the most power in the company going into aerosol filling is the financial director, since "he must first weigh up the financial ad-

(*Continued on Page* 55)

INDUSTRY'S BEST EQUIPPED
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Dupli-Color Products Co., Inc., Chicago, recently introduced a new packaging line for its glossy spray enamels. The spray finishes, which are sold in six and 12-ounce containers, are being marketed in colorful corrugated shipping cartons and refill packages that can be later used as product re-shippers. The new packaging was designed and produced by Hinde & Dauch, Chicago.

A unique aerosol Christmas gift for its customers has been designed and distributed by Dodge & Olcott, Inc., New York essential oil producer. An aerosol travel kit, it contains an aerosol cologne, an aerosol hair spray, and an aerosol hand lotion, all in purse size containers. The package is to illustrate the important uses of fragrance in the aerosol package.

Touch-N-Spray is a new all-purpose aerosol perfume atomizer being made by the Richford Corp., Oceanside, L. I., N. Y. The practical, lightweight plastic container is equipped with a long, gold-metal cap that is designed to prevent accidental discharge.

Turtle Wax auto polish, the first foam type aerosol paste wax for autos, was introduced late last month by the Turtle Wax-Plastone Co., Chicago. Designed for convenient and efficient car polishing, it is formulated to provide a long lasting "hard shell finish." Packaged by G. Barr and Co., Chicago custom filler, it will retail at $2. Glen Baker, Turtle-Wax-Plastone art director, designed the five color label.

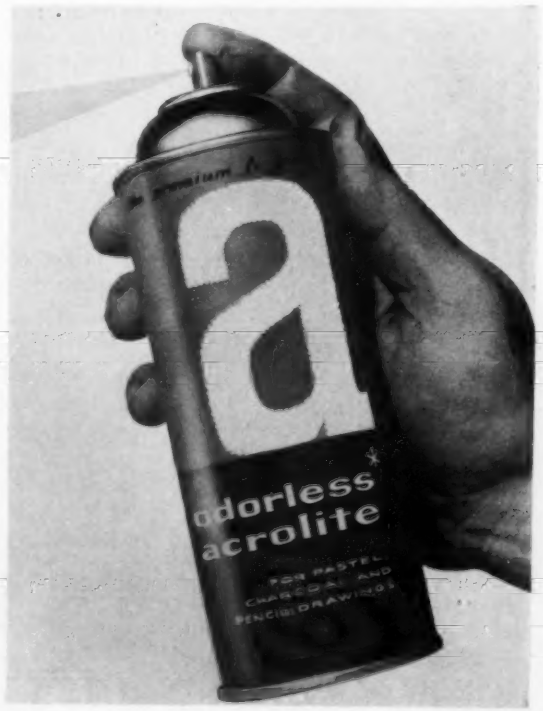
NEW PRODUCTS AND PACKAGES

Adorn Invisible Hair Spray is another of the special product and label designs by Donrico, Inc., New York. Introduced nationally in October, the package is equipped with a Sterling Seal overcap with Donrico's special alcohol-proof embossed wrapping. The marketer is the Toni Division of the Gillette Co., Chicago.

End-O-Rak, a new floor-standing merchandiser, is being used by the Plant Food Division of Swift & Co., Chicago, to merchandise its aerosol and non-aerosol products to the garden supply trade. The company's aerosol line is being filled by Peterson Filling Co. The special rack provides 16 feet of shelf facing yet it occupies only two feet by two feet of floor space.

Chocolate Flo'z, a nitrogen propelled chocolate syrup, was placed on the national market recently by Sifers Chocolate Syrup Co., Inc., Iola, Kansas. The product dispenses in a steady stream, does not require refrigeration, and will retail at 49 to 59 cents. It is packed in American Can's lithographed 16-ounce pressure cans and equipped with a Lemay valve.

Odorless Acrolite, "the first odor-free protective coating ever developed in a pressurized container for protecting artwork," was introduced last month by Acrolite Products, West Orange, N. J. It is being sold in six, 12, and 16-ounce sizes to protect the smudge proof artwork where pastel, charcoal, or pencils are used.



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MANUFACTURERS OF CLOSURES, CONTAINERS and MACHINERY

Canadian CSMA Will Be Formed Sometime This Year

CANADIAN organization of its own chemical specialties manufacturers association will probably take place early this year, it was learned by *Aerosol Age* late last month. A working agreement with the projected organization, which is patterned on the U.S. Chemical Specialties Manufacturers Association and will work closely with it, was approved in principle by CSMA's board of governors at the association's 44th annual meeting at Hollywood Beach, Florida. At present the matter has been referred to the U.S. association's Executive Committee so that a mutually satisfactory agreement can be worked out between the CSMA and the projected Canadian group.

The Canadian association would comprise the same six divisions that presently make up the U.S. CSMA: Aerosol; Automotive; Disinfecting and Sanitizing Chemicals; Insecticides; Soaps, Detergents and Sanitary Chemical Products; and Waxes and Floor Finishes. To qualify for active membership, a firm would have to be engaged in the manufacture or sale of chemical specialties, and be a resident in Canada. "Associate" membership would be made available to firms supplying materials and/or services to the industry, and these members would have limited voting rights.

The Canadian group would maintain close ties with the CSMA, it was stressed, especially on technical matters. A number of the CSMA's technical manuals and services (including such things as the Official Test Aerosol Insecticide) would be adapted and complemented to Canadian usage, and would then be available to Canadian members. It is this cooperative agreement that is at present being acted on by the CSMA's executive committee.

The Canadian association also would participate in the meetings of the U.S. CSMA, and U.S. suppliers and members would be encouraged to attend conventions of the Canadian association.

Organization of the Canadian association is currently being conducted under a steering committee headed by G. E. Flemming, Natural Products Corp., Ltd., Montreal. Others on the committee include Ralph Howard, Howard Chemical Ltd.; G. V. Jansen, S. C. Johnson & Son Ltd.; Reg. L. Jones, Colgate-Palmolive Ltd.; G. S. Lang, Connecticut Chemicals (Canada) Ltd.; A. Robins, Cartier Chemicals Co. Ltd.; R. S. Sweet, Success Wax Ltd.; A. L. Taylor, R. M. Hollingshead Co. of Canada, Ltd.; Geoffrey H. Wood,)G. H. Wood & Co., Ltd.; and A. H. Carter, Sherwin-Williams Co. of Canada, Ltd.

The Canadian group's steering committee estimates that "for practical purposes in the initial organization period", there will be 100 to 125 firms interested in the Canadian association. Also it was estimated that there would be another 35-50 associate members, including U.S. manufacturers. The committee decided, at a meeting Nov. 25, that the association's by-laws be compiled from a combination of those of the CSMA and the Canadian Agricultural Chemicals Association.★

CSMA to Observe European Trade Groups

THE Chemical Specialties Manufacturers Association early this year will have a qualified observer in Europe to take stock of recent trade association developments there, it was announced by the association last month. Frederick G. Lodes, president of Lodes Aerosol Consultants, Inc., New York, last month was authorized by the CSMA's Board of Governors to observe these recent developments. He is planning a business trip to Europe early this year and will include talks with various European trade association officials.

The naming of Mr. Lodes came on the heels of a number of recent developments hinting at early formation of aerosol and other trade associations on the Continent. Much discussion on this subject took place at the CSMA's 44th annual meeting last month in Florida.

At its meeting held during the convention, the Aerosol Division's Administrative Committee devoted considerable discussion to the European trade association picture, and passed a resolution to observe it further and recommend a course of cooperative action between these associations and the CSMA. The Board of Governors appointed a special committee to make specific recommendations of procedure, and it was this committee that recommended the naming of a qualified observer. The observations made by Mr. Lodes, together with a general review of the general situation, is to be presented to the Board of Governors for action, probably in time for the next CSMA meeting.

Mr. Lodes, who is active in the Aerosol Division of the CSMA, is also a member of the Board of Governors. Since 1952 he has made several trips to Europe, and has been close to the growth of the industry in Europe since its inception.

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Bon Ami Drops Ad Agency

The Bon Ami Co., New York, marketer of "Jet-Spray Bon Ami" and one of the leading dollar spenders for aerosol advertising, last month parted company with Erwin Wasey, Ruthrauff & Ryan, Inc., New York advertising agency, which had been handling the company's $1 million-per-year advertising account. Bon Ami reportedly has not yet named another agency.

According to *The New York Times*, "An agency spokesman said the change resulted from basic disagreements on marketing and advertising policy." It was reported that a "conflict of opinion" had developed over Bon Ami's desire to enter into barter film deal.

NEWS of Pressure Packaging

Lachner to Head Babbitt

Marshall S. Lachner was elected president and chief executive officer of B. T. Babbitt, Inc., New York, at

Marshall S. Lachner

a special board meeting held in New York on Dec. 4. At the same time he was appointed to the executive committee and the board of directors. The company, a leading producer of cleansers and other household and aerosol products, has plants in Bridgeport, Chicago, Albany, Oakland and Vernon (California), Toronto, and in England and Brazil.

Mr. Lachner's election fills a vacancy that has existed since last May, when Samuel Mendleson left the presidency to become board chairman. Mr. Lachner's appointment terminates an operating policy by which the company was run on a committee-management basis. Active operation of the company had been under the supervision of A. O. Samuels, president of the Connecticut Chemical Research Corp., (a subsidiary of Babbitt), and Harold H. Shincel, president of Consolidated Metal Products Corp. and a member of the Babbitt executive committee. Under the new plan, the executive committee will work under Mr. Lachner, chief executive officer.

Mr. Lachner comes to Babbitt after 16 years with the Colgate-Palmolive Co., where he had been vice-president of the Soap Division.

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Rexall Drug to Expand

Rexall Drug Co., Los Angeles, is planning a $5 million expansion in its manufacture of pharmaceuticals, ethical drug specialties, surgical and industrial rubber, paper and chemicals, it was announced by Justin Dart, president, late last month. The announcement came on the heels of an announcement by Rexall that it had sold $5 million of its notes to a group of five major insurance companies.

Battelle Names Thomas

Dr. B. D. Thomas has been elected president of the Battelle Memorial Institute, Columbus, Ohio, to succeed Dr. Clyde Williams, who retired. For the past year Dr. Thomas was a director of the institute, which performs considerable aerosol industry research. He joined Battelle as a research engineer in 1934 and became vice-president two years ago.

Dr. Thomas established the institute's first Division of Chemical Research in 1939, and helped set up branch research laboratories in Geneva, Switzerland, and Frankfurt,, Germany.

Shulton Buys Aerosol Line of Bridgeport Brass

SHULTON, Inc., Clifton, N. J., cosmetic manufacturer and aerosol marketer, late last month purchased the Aerosol Division of the Bridgeport Brass Co., Bridgeport, pioneer aerosol filler. The purchase, rumored in the industry for several months, was announced jointly on Dec. 20 by Herman W. Steinkraus, Bridgeport Brass president, and George L. Schultz, president of Shulton.

Shulton will broaden its coverage in the consumer field, with the addition of the Bridgeport Aerosol line, to include such established products as "Good-aire" air freshener, "Aer*A*Sol" insecticide, and several other pressurized products being marketed nationally. The cash transaction is expected to be completed on Feb. 1, and according to the joint announcement, does not include real estate.

Mr. Steinkraus declared that the sale is part of a deemphasis of his firm's activities in the non-metal industries, and that aerosol products no longer fit into its long range program. Bridgeport's products are primarily in the brass, copper, aluminum, and special metal industries.

In announcing the purchase, Mr. Schultz said that Shulton is now entering the consumer chemical field with a line of established products, thereby "taking advantage of its proven consumer merchandising experience and organization." He said that the new aerosol line will be handled by Shulton's Fine Chemicals Division, and will be distributed through channels formerly employed by Bridgeport.

Bridgeport Brass pioneered in the development of aerosol insecticide during World War II in conjunction with the U. S. Department of Agriculture. The company manufactured the first refillable aerosol insecticide containers, turning out millions of these units during World War II for the Armed Forces.

Bridgeport's aerosol insecticides and "Good-aire" were the first postwar products of this type offered to the consuming public. Following the war years, Bridgeport's aerosol line was expanded to include products ranging from plastic sprays to insect repellents for direct use on humans.

Frangos Joins Powr-Pak

Powr-Pak, Inc., Bridgeport custom filler, has announced the appointment of John Frangos as technical director of pharmaceuticals and foods. He

comes to Powr-Pak from the General Chemical Division of Allied Chemical & Dye Corp., where he was senior technical representative for aerosols in both the national and international divisions. In this capacity, he headed a group engaged in product formulation and improvement, and also customer technical assistance.

Previous to his association with General Chemical, Mr. Frangos was president of Johnli Laboratories, research and development director at Vincent Christina, Inc.; department supervisor for injectable and bolt solutions for the laboratories of the Vitamin Corp. of America; and chief chemist for the U.S. Vitamin Corp. He holds a B.S. in chemistry from St. John's University and a Masters Degree in chemistry from New York University.

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Shulton Appoints Theile

Shulton, Inc., New York, recently announced the appointment of Fred Theile as perfume administrator for the perfume department. For the past six years he was production manager of the company's Fine Chemicals Division, and prior to that was with Norda Essential Oil and Chemical Co.

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Cowles to Make Repellent

Diethyl toluamide, a new insect repellent developed early last year by the USDA, will be produced by Cowles Chemical Co., Cleveland, in its Skaneateles Falls, N. Y. plant. The product will be produced with a minimum meta isomer content of 95%, and later the company plans to offer a product of 85% meta content. Cowles' product will be marketed under the tradename "Detamide."

•

Sterling Buys Homemaker's

Sterling Drug Co., New York, has announced the acquisition of the assets, business, and goodwill of Homemaker's Products Corp., Englewood Cliffs, N. J., manufacturer of the new aerosol pharmaceutical dispenser "Nebu-Halent." The company also makes and distributes "Diaperene," a line of products for infant and geriatric use in care of the skin.

Sterling also purchased the Benson-Nuen Laboratories, wholly-owned subsidiary of Homemaker's.

Bush Joins Fritzsche

Donald H. Bush, whose family name has been long associated with the essential oil and aromatic chemical industries, has just joined the Perfume Division of Fritzsche Brothers, Inc., New York. Mr. Bush has been active in this field throughout the Metropolitan area for the past ten years.

•

Alvah Davidson Dies

Alvah E. Davidson, former president of the Bon Ami Co., New York, died last month in Port Chester, N. Y. at 59. Mr. Davidson joined Bon Ami in 1940, was named president in 1945, and retired in 1955. Previous to joining Bon Ami, he was an executive with the Erickson Co., and with McCann-Erickson, Inc., both advertising agencies.

Aerosol Paint Market Expected to Rise

PRESSURIZED spray paint, 22.5 million units of which were sold in 1956, may take over a much larger share of the small-package consumer paint market in the next few years, with annual sales of 75 to 100 million units probable by 1967, the Du Pont Co. declared recently.

Basing its growth estimates on a nationwide survey among urban and metropolitan householders, the company's "Freon" Products Division noted that sales of paint in half-pint and smaller cans have decreased over the last five years, while in the same period sales of aerosol paints have increased 500%. The smaller size cans, especially useful in touch-up work, are estimated to account for five to 10% of the current consumer market for paint.

Du Pont's consumer survey demonstrated that users, once they have tried an aerosol paint, prefer it two-to-one over the brush method of application. Although not suited economically for finishing large surfaces, aerosol paints are said to do difficult jobs more easily, faster, and more efficiently than conventional methods, they say.

Pointing up the need for considerably more promotion and education at the consumer level, the survey indicated that only 36% of consumers had ever heard of paints, enamels, or lacquers in pressurized spray cans, although such products have been available for about eight years. Of this group, only 15% said they actually had used an aerosol paint, but they rated the self-spraying paint as preferred in 57% of the cases.

Principal reasons given by consumers for their aerosol paint preference were ease of use and application, lack of messiness, even-spreading and quick-drying qualities. Among consumers who preferred other forms of packaging after trying the aerosol method, 58% said they found the pressurized package difficult to use from a spray control standpoint, while 36% felt it was too expensive.

Paint and hardware stores were discovered to be the point of purchase for 61% of aerosol paint users, while drug and grocery stores each accounted for 3%, and department stores, 2%.

The Du Pont survey is one of a series of market studies it has conducted in the interests of the aerosol industry since 1947.

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SURE WAY

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AEROSOL

OVERCAPS

The CONSOLIDATED
MODEL H-O-F CAPPER

. . . . **Automatically** sorts and applies all the various types of aerosol caps now being used.

. . . . **Applies** odd shapes as well as conventional types.

. . . . **Equipped** with variable speed controls and can be arranged for speeds from 60 to 250 caps per minute.

. . . . **Changeover** from one size container to another can be made easily and quickly.

. . . . **Easily** fitted into any aerosol filling line.

If you are using aerosol containers, be sure to get all the facts about the Consolidated H-O-F Capper for applying the overcaps before you buy.

Write for complete information

CONSOLIDATED PACKAGING MACHINERY CORP.
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Common Market Conference

A three-day conference designed to acquaint American companies with the effect of the European Common Market on their overseas operations and to prepare them for sweeping changes in the economy abroad will be held Feb. 3-5 at the Biltmore Hotel, New York, by the International Management Division of the American Management Association.

Four Europeans who have been active in the implementation of the common market idea will take part in the program. They are Robert Marjolin, vice-president of the French delegation to the Intergovernmental Conference on the Common Market and Euratom, who will highlight the working elements of the common market agreement; Fernand Spaak, *chef de cabinet* to the president of the high authority of the Coal and Steel Community, who will point out the lessons learned by that organization; Peter F. D. Tennant, overseas director, Federation of British Industries, who will discuss the terms of the Free Trade Area Agreements now being drafted; and Franck Bauer, director general, Euro PRSA who will predict the pattern the common market will follow in the next ten years.

A full analysis of the provisions of the European Common Market Treaty will be presented by George W. Ball of the Washington law firm of Cleary, Gottlieb, Friendly & Ball. Thomas C. Mann, Assistant Secretary of State for Economic Affairs, will review U.S. trade policy and the European Common Market.

Two AMA workshop seminars will be held following the conference, Feb. 6-7, at the Astor Hotel to give those who attend the meeting a chance for more intensive discussion of the ECM.

•

Bush New Merck Chairman

Dr. Vannevar Bush, director of the Office of Scientific Research and Development during World War II, has been elected board chairman of Merck & Co., Rahway, N. J., pharmaceutical manufacturer. Dr. Bush, who succeeds the late George W. Merck, has been a director of Merck since 1949.

Resistant Flies On Rise

House flies are developing increasing resistance to most of the contact sprays now in use, G. C. Labrecque, USDA entomologist, told a meeting of the Entomological Society of America in Memphis, Tenn. last month. He declared that chemists are making almost no headway in their fight against the house fly, and USDA tests in Florida over the past three years "clearly indicate" that flies are becoming more resistant to the widely-used organo-phosphoros insecticides.

These insecticides, which include malathion, "Diazinon", parathion, and "Dipterex", have replaced DDT and other spray materials to which flies had previously become resistant.

Mr. Labrecque reported that house flies collected from eight dairies and six poultry houses in Florida were three to 133 times as resistant as normal flies to malathion sprays. In similar tests, it was observed that ten of the fly strains were three to 72 times as resistant to "Dipterex"; seven were three to 18 times as resistant to parathion, and five were five to 38 times as resistant to "Diazinon".

The resistance differences also manifested themselves in use of poisoned bait. Mr. Labrecque reported that in these tests 10 strains were 13 to 105 times as resistant as normal flies to malathion, and four were three to 19 times as resistant to "Dipterex".

He pointed out that in similar tests conducted in 1954 and 1956, the resistance of these four strains to "Dipterex" or malathion baits did not exceed eight times normal.

•

K-38 Valves for Britain

Production of the K-38 tilt-action aerosol valves has been begun in Great Britain by Specialty Valves, Ltd., Wolverhampton, England. The valve, designed by Aerosol Research Co., Forest Park, Ill., will be made under license in Britain and will be available to aerosol packagers early this year.

In the United Kingdom the valve will be known as the "QG" (for quick gassing). It operates by deflection, the valve being actuated by tilting the nylon tip forward in the direction of the object to be sprayed.

•

Kraus to Stalfort Board

Richard J. Kraus has been elected to the board of directors of John C. Stalfort & Sons, Inc., Baltimore Custom filler. He joined Stalfort in 1948 as an emulsion chemist, in 1952 was promoted to chief chemist, and in 1954 was appointed sales manager. He has just been named director of sales and technical departments.

•

Curtis Forms Pharmaceutical Unit

Helene Curtis, Inc., Chicago, last month announced the formation of a new division, called Curtis Pharmacal, Inc., in a bid for a larger share of the treatment toiletry market. The move is in line with a general expansion program launched in 1956.

The company is already marketing "Enden" and "Curtis Dandruff Treatment Hair Tonic" through the new division, and, according to Willard Gidwitz, Helene Curtis president, is planning development of a new line of products.

•

Breck to Sponsor TV Show

John H. Breck, Inc., Springfield, will co-sponsor a series of 14 hour-long television spectaculars during 1958. The series, entitled "The Shirley Temple Story Book" will feature the former child actress and will be based on literary classics of the legendary or fairy tale type.

It will be telecast over the entire NBC network, beginning Sunday, Jan. 12, when it will replace the "Steve Allen Show" for that night. Miss Temple will star in the first show and either act in or be hostess for the rest of the series.

•

Ponds Appoints A. A. Lynn

Andrew A. Lynn has been named vice-president of domestic marketing of Chesebrough-Pond's, Inc., New York. He was also appointed to the firm's board of directors. Mr. Lynn had been vice-president in charge of sales for Revlon, Inc.

Pet Market Still Untapped

The aerosol pet market is still virtually untapped, a Du Pont survey, released in November, has revealed. In a special survey designed to determine the current status and future potential of aerosol pet sprays, only 12% of the householders interviewed said they had heard of pet preparations in self-spraying aerosol containers, and of this figure 71% of those had tried them.

Among the persons who said they had tried aerosol pet sprays, 11 to one preferred the push-button spray can over the next most favored form of application. Ease of use, effectiveness, lack of mess, in application, and economy were mentioned (in that order) as reasons for consumer preference for aerosols.

Du Pont reports that U.S. pet owners are spending upwards of $16 million a year on pesticides, veterinary biologicals, and miscellaneous animal care products for their pets. Externally-applied pesticides alone accounted for close to $3.6 million in 1956, veterinary biologicals added another $4.3 million, and such pet medicaments as mange cures, shampoos and hair cleaners rang up an estimated $8.34 million in sales.

Du Pont market analysts concluded that "there appears to be no significant resistance to the purchase of aerosols except inertia which could be readily overcome by selling prospects on the positive advantages of the aerosol products."

•

Roll-On Gains Popularity

The roll-on type applicator for deodorants is rapidly gaining in popularity, reports *American Druggist* in its issue for Dec. 2. This particular type applicator is expected to take about 30% of the deodorant market in 1958, it is reported. *American Druggist* predicts that the over-all deodorant market will increase about 10% this year.

•

Allan Ritch Retires

Allan R. Ritch retired at the end of 1957 after 18 years with the sales staff of Polak & Schwarz, New York essential oil supplier.

G. Barr Names Black

Robert Neal Black has been named to the newly created post of director of engineering of G. Barr and Co., Chicago-headquartered contract aerosol producers. He will head engineering for Barr's plants in New York and Los Angeles, as well as Chicago.

From 1951 until joining G. Barr, Mr. Black served as job engineer with Colgate-Palmolive Co., Central Engineering Division, New York. In that company's automatic machine department, he designed aerosol filling equipment and supervised its installation. His work also included cost studies, conversion of equipment for hydrocarbon propellant handling, and machine designs for efficiency and safety in high speed production units.

From 1946 to 1951, he was chief air conditioning engineer and plant engineer at Pathe Industries, Inc., New York, where he supervised industrial refrigeration, such as temperature and humidity control of chemicals, handled technical maintenance of film production equipment, and designed film processing machinery.

During World War II, Mr. Black was on active duty in the U. S. Navy, Bureau of Ordnance, assigned to development of electronic under-water weapons.

Aero- Matic Labs.

"Pry Tester"

The greatest single problem confronting the Aerosol Industry today, perhaps is that of package leakage. Leaking units discovered immediately after filling are costing the Custom Packager thousands of dollars per week. Even more costly are the type which do not show leakage immediately, but seep out on retailers' shelves and in the Consumers' home.

We have developed a tool which can cut down these losses by testing the seal between valve mounting cap and can bead. We call it a "Pry Tester". This method of "Pry Testing" of one inch caps and cans in a *Non Destructive* manner permits constant spot checks on the production line. It will assist in adjusting crimping heads and prove invaluable in quality control and laboratory.

Aero-Matic Laboratories Corp.

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GREENLEAF 6-2542

Nitrous Oxide Plant Built

Ohio Chemical & Surgical Equipment Co., Madison, Wisc. last month began production at its new Cleveland plant for the manufacture of nitrous oxide.

With completion of the new facility at Cleveland, Ohio Chemical now has the largest manufacturing capacity in the world for the production of both nitrous oxide and cyclopropane. When operating at full capacity, the combined annual output of the two new plants will be in the neighborhood of 240 million gallons of nitrous oxide and 9 million gallons of cyclopropane. Investment by Ohio Chemical in both the plants and related operating and distribution facilities has been in excess of $1 million.

The plants were constructed under the supervision of the Engineering Department of Air Reduction Co., the parent organization, and equipment for both new facilities was custom designed and engineered. Manager of the two new plants will be Stanford Smith.

Nitrous oxide and cyclopropane are used primarily in the medical field as inhalation anesthetic agents to relieve pain during surgery. Within recent years, the application of nitrous oxide has been extended to the packaging of pressurized products such as whipped cream. In addition, nitrous oxide is also used for leak detection in testing air suspension systems in the 1958 model automobiles.

•

Firmenich Names Morrish

Edward P. Morrish has been elected vice president in charge of technical liaison for Firmenich, Inc., New York, it was announced by the company late last month.

Mr. Morrish has been the company's technical director for the past ten years. His new capacity will permit broader technical liaison with the cosmetic and pharmaceutical industries. Prior to joining Firmenich, he was chief of the Cosmetic Section of O.P.A. in Washington, D. C., and has had extensive experience in the drug and cosmetic industry.

Survey Reveals Gains for Newer Hair Sprays

NEWER brands of aerosol hair sprays are cutting into the high percentage of consumer preference hitherto enjoyed by some of the established brands, it was indicated by the *Beauty Reader Forum*, a survey recently released by Fawcett Publications, New York, publishers of *True Confessions*, *Motion Picture*, and other women-oriented magazines.

The survey, compiled on the basis of questionnaire responses by 1513 widely scattered female readers, revealed percentage gains by Avon, Breck, Lustre-Net, and a number of other brands. The two leaders, Revlon and Helene Curtis, which last year shared the major portion of the hair spray market (in the preferences of the women questioned), in 1957 dropped important percentages to eight other brands. However, the figures cannot really be interpreted as any kind of a loss for the leaders, since the aerosol hair spray market generally has shown an increase over the 1956 figure.

The survey also revealed that drug stores have lost a certain percentage of their sales of the product to supermarkets and house-to-house, and beauty shop sales. Drug store sales of the product fell from 57.7% in 1956 to 51.1% in 1957, while supermarkets gained 4.3 percentage points over the same period.

Though no breakdown of aerosol and non-aerosol colognes was indicated in the forum, Avon, which has a considerable aerosol line, maintained its lead over the rest of the brands. Another aerosol-oriented producer, Shulton, recorded a jump from 2.8 to 13.9% of the respondents, landing in second place in the survey.

Cologne or Toilet Water	1957	1956
Brands		
Percent Answering	91.6%	92.8%
Avon	28.3	28.7
Shulton	13.9	2.8
Coty (Lelong)	9.4	9.5
Lentheric	7.1	6.0
Evening in Paris	5.2	3.7
Faberge	5.2	6.4
Lanvin	3.9	0.9
Tussy	3.7	4.7
Yardley	3.2	2.8
Dana	2.9	0.9
Helena Rubinstein	2.4	1.8
Elizabeth Arden	2.3	0.5
Dorothy Gray	2.1	2.6
Fuller	2.1	1.4
Revlon	2.1	—
Houbigant	1.9	0.9
Evyan	1.8	1.1
Chanel	1.6	0.8
Prince Matchabelli	1.6	1.5
All Others	20.5	26.8
	121.2%	103.8%
	(618=100.0%)	(654=100.0%)

Liquid Hair Spray		
Percent Who Use	42.2%	42.7%
Brand		
Percent Answering	96.8%	**
Revlon	29.5%	35.8%
Helene Curtis	28.3	34.2
Avon	5.8	—
Breck	5.4	—
Lustre-Net	4.9	—
Nestle	3.6	—
Charles Antell	3.3	—
Max Factor	3.3	—
Tweed	3.1	—
Sof-set	2.0	4.1
All Others	15.8	26.4
	105.0%	100.5%
	(448=100.0%)	(489=100.0%)

**No comparable data for 1956.

Place of Purchase	1957	1956
Drug Store	51.1%	57.0%
Food Store or Super Market	17.3	13.0
Department Store	12.4	12.8
House-to-House	8.4	5.9
Variety Store	7.4	9.0
Beauty Shop	5.1	*
Received as a gift	1.7	7.3
All Others	1.5	5.1
	104.9%	104.1%
	(474=100.0%)	(454=100.0%)

—Convention Calendar—

Packaging Machinery and Materials Exposition, *Atlantic City, N. J.*.....March 25-28

American Pharmaceutical Manufacturers Association,
Boca Raton Club, Boca Raton, Florida.....April 14-16

Chemical Specialties Manufacturers Association, 44th Mid-Year Meeting,
Netherland Hilton Hotel, Cincinnati, Ohio.....May 19-21

American Management Association Packaging Conference,
Hotel Statler, New York, N. Y......May 26-28

Chemical Specialties Manufacturers Association, 45th annual meeting,
Commodore Hotel, New York, N. Y......Dec. 9-11

Compressed Gas Association, 45th Annual Meeting,
Waldorf-Astoria Hotel, New York, N. Y......Jan. 20-21

National Packaging Exposition (American Management Association),
Coliseum, New York, N. Y......May 26-29

Toilet Goods Association, *Poland Spring House, Poland, Me.*.....June 25-29

Western Packaging & Materials Handling Exposition,
Civic Auditorium, San Francisco, Calif......Aug. 11-13

Aerosol Film Available

Mojonnier Associates, Inc., 9151 Fullerton Avenue, Franklin Park, has available on loan a full color sound motion picture showing how aerosol packaging is done by both the cold and pressure fill methods.

Prints of this film are available to schools, clubs and other interested groups. The film tells the story of installation of an aerosol packaging line, which is intended to dispell many of the popular beliefs that packaging aerosols is a complicated process. The non-technical handling of the commentary makes the packaging process clear to the layman. For reservations and further information, write the Mojonnier film library.

•

P&S Names d'Ancona

Polak & Schwarz, Inc., New York, recently appointed Benjamin d'Ancona to the post of senior vice-president of the American company. He has been with the firm for 38 years, and held positions with branches in different parts of the world before joining the U. S. company in 1940.

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COVERS ALL THE EQUIPMENT NEEDED FOR
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Chloromycetin Called Safe for Aerosol Application

TWO Howard University physicians recently reported that a new form of Chloromycetin, the acid succinate sodium salt, is "safe and effective" when used by aerosol and intramuscular injection, and that it is "well suited to the treatment of chronic respiratory illness."

In a paper before the fifth annual Antibiotics Symposium at the Willard Hotel in Washington in October, Dr. Howard M. Payne and Dr. Robert L. Hackney, Jr., of the university's Division of Chronic Pulmonary Diseases, declared that Chloromycetin Acid Succinate can bring about "bacteriostasis and clearing of purulent sputum in the most severe emphysema case."

The new compound is the sodium salt of the monosuccinate ester of Chloromycetin, which was introduced by Parke-Davis in 1949. The study of Chloromycetin Acid Succinate administered by spray was conducted to determine its effectiveness among patients with infections associated with chronic obstructive emphysema, and others with infections associated with surgical or other respiratory disabilities.

"For many of these patients, bronchial damage is already severe when first seen, and recurrence after combined parenteral or oral therapy is the rule rather than the exception," the doctors pointed out. "For this reason, and because development of drug resistant pyogens is feared, it is thought desirable to deliver an effective dose of antibiotic directly to the affected area."

The doctors treated 20 patients with Chloromycetin Acid Succinate, administering it by intermittent positive pressure breathing nebulization. It "was tolerated," and no allergic reactions were observed. In 15 of the 20 whose followup "is reasonably complete," the doctors reported satisfactory results.

Drs. Payne and Hackney said, "the solubility of the material Chloromycetin Acid Succinate makes it ideal for nebulization when dissolved either in water or a mucolytic agent. Our observations indicate that three or four days of treatment are sufficient in the most severe emphysema case, and one or two treatments may suffice in the less severe cases."

They pointed out that early and effective treatment of bronchial infections in asthmatics and other persons with chronic respiratory disabilities "is of great importance," since the progress of the illnesses may be limited or prevented by "prompt administration of effective antibiotic medication."

"This applies," they said, "with particular force to the asthmatic or emphysematous patient with infection. Prompt bacteriostasis, with simultaneous use of mucolytic agents, iodides, and bronchial relaxant drugs, can do much to limit future progress of the disability.

"Due to the fact that bacillary resistance does not develop rapidly to chloramphenicol acid succinate (sodium salt), and that high local concentrations can be developed in the bronchial tree by nebulization and administration by intermittent positive pressure breathing, the drug seems well suited to the treatment of chronic respiratory illness."

Before they started the study of Chloromycetin Acid Succinate in nebulization, the doctors treated 15 patients with sub-acute or chronic respiratory illnesses with the compound intramuscularly. "The therapeutic response observed in these patients," they reported, "was prompt. It was thought to be equivalent to that expected from the administration of 1,000,000 units of crystalline penicillin. The absence of toxic or allergic reactions is notable."

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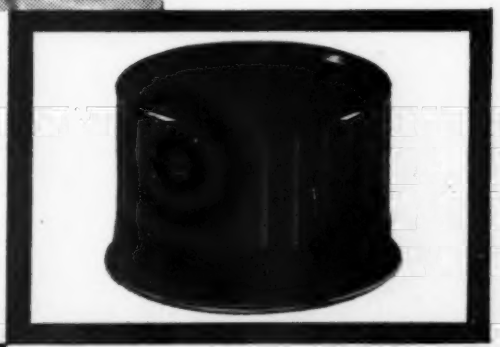
Sole Names Sales Agent

Hukill Chemical Corp. has been selected by Sole Chemical Corp., Chicago surfactant producer, to serve as technical sales representative in Ohio, western Pennsylvania, and southern Michigan.

best dressed aerosols are wearing...



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DuPont Secures Patent on Linear Polyethylene

E. I. du Pont de Nemours & Co., Wilmington, announced late last month that it has received a U.S. patent on linear polyethylene, a common packaging material produced by a number of leading chemical companies. The plastic has been used in the aerosol industry for containers (in Great Britain), and for actuators and other valve parts. It is not to be confused with conventional polyethylene, the more flexible material used in squeeze bottles and most aerosol dip tubing.

The patent, according to the *New York Times*, covers linear polyethylene "as a composition of matter" regardless of how it is made. The newspaper reports that DuPont had notified other producers that the patent award was forthcoming and had offered them manufacturing licenses. The companies affected are the Celanese Corp. of America, Phillips Chemical Co., and Hercules Powder Co., all of which are making linear polyethylene at present. W. R. Grace & Co., Union Carbide Corp., Koppers Co., and the Dow Chemical Co. are all either approaching production or have new plants under construction. Also interested are the Standard Oil Co. of Indiana, which has licensed the Eastman Kodak Co. and the Spencer Chemical Co.

The *Times* reports that present production capacity for the product is 180 million pounds a year, but that it is expected to rise to 230 million pounds by the end of 1958, and 500 million pounds by 1960.

Linear polyethylene, also known as "high - density" and "low - pressure" polyethylene, is stiffer, glossier, stronger, and more resistant to heat than conventional polyethylene.

Also immediately after the DuPont announcement, Phillips Petroleum Co. contended that the DuPont patent would not affect its own patent applications. Hercules is producing linear polyethylene under a process developed in Germany by Karl Ziegler, as are Dow and Koppers.

•

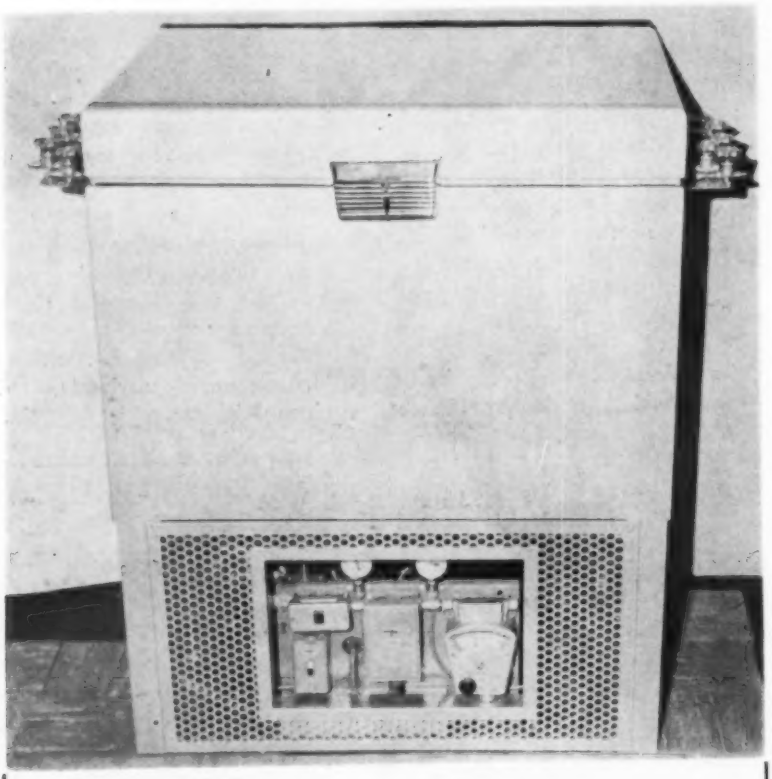
Wesemann Honored at Luncheon

Hans P. Wesemann, vice-president in charge of sales for Fritzsche Brothers, Inc., New York, was recently honored at a luncheon given him by the company's officers and directors in celebration of his 40th anniversary with the firm. He joined the Fritzsche organization in 1917, and in 1941 was elected to the vice-presidency.

•

MM&R Issues New Catalogue

Magnus, Mabee & Reynard, Inc., New York essential oil company, has just issued a Winter 1957-8 edition of its catalogue listing over 1000 products. Under the heading "What's New for You" are announced a number of new products, including replacements for resinoid, musk, tonquin, and civet. Copies may be obtained by writing to the company's advertising department, 16 Desbrosses St., New York 13.



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from the

EDITOR'S MAILBAG

To The Editor:

In all my experience with journals all over the world, I have never been at such loggerheads with an editor before. Despite my protests about your editing of my article, you have still gone into print with the second part of the article. In point of fact the edited article is at least 100 per cent less effective than the original.

It seems to me that the only course left for me to take is to publish my original in an English journal and at the same time explain how the edited version came to appear in *Aerosol Age*. I am sincerely sorry that our dealings have not been in a happier vein, but I think that you have got to realize that no journal has the right to change either the style or the contents of the article. This is the sole right of the author.

Jack Pickthall
POLAK & SCHWARZ (ENGLAND) LTD.
Enfield, England

This letter is the latest in a long series of letters between Mr. Pickthall and the editor. Mr. Pickthall feels himself unjustly treated because of some extensive editing that was required of his article in the November and December issues of Aerosol Age. This editing was made necessary by the extreme length, repetitious passages, and somewhat personal arguments used by Mr. Pickthall. We must stand on our traditional right to edit articles submitted to us, since it is our position that the chief function of the editor is to present the material to the reader in the clearest, unbiased, and most concise manner possible. It is felt that the editor is thus obliged to first serve the reader.

A Correction

In the Aero-Matic Laboratories advertisement on page 89 of the December issue, the height of the "Pry Tester" was given as 28". Actually, the unit is only 13" high, 5" wide, and 10" in length. It weighs 13 and one-half pounds.

Canner's Announce Program

Bernard M. Shanley, former special counsel and secretary to President Eisenhower, will speak on "Foreign Relations" at the opening general session of the 51st Annual Convention of the National Canners Association, Jan. 20, at the Hotel Traymore, Atlantic City, N. J.

Polak's Frutal Works Holds Annual Sales Meeting

Polak's Frutal Works, Inc., Middletown, N. Y. held its annual sales meeting from Dec. Dec. 16-19. Participating in this meeting were all sales representatives from the U.S., Canada, and Japan. Bernard Polak opened the meeting and spoke a few words of welcome. The three day meeting was taken up with discussions on new flavorings and perfumes, panel testing and panel discussions. It was concluded with a cocktail party and dinner held at the Orange County Golf Club.

Du Pont's Thompson Retires

Robert J. Thompson, a pioneer refrigeration engineer, retired at the end of December after more than 25 years with the Du Pont Co., Wilmington, Del., the last nine years of which he has been director of sales for its "Freon" Products Division.

His career in refrigeration has spanned nearly 40 years, beginning with the General Motors Corporation's program for development of household and commercial electric refrigerators in the early 1920's. He was a commercial sales engineer for General Motors "Frigidaire" Division from 1925 until 1931, at which time he joined Kinetic Chemicals, Inc., a jointly owned subsidiary of General Motors and the Du Pont Co. (which had been established to develop "Freon" fluorinated hydrocarbon refrigerants).

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For conventional pressure filling of king-size containers and standard-size closures:

Model 14-A
- 0 to 500 cc. capacity
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- 0 to 300 cc. capacity
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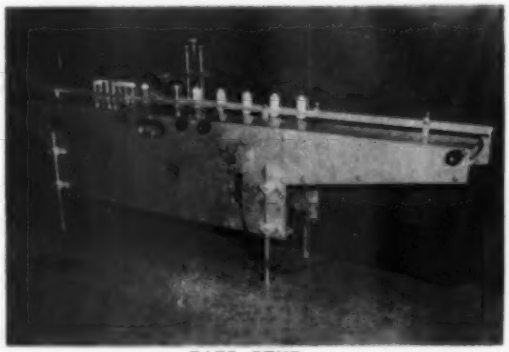

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Who's Who in the Aerosol Industry

Steele Elmi, technical director of cosmetics and household specialties for Powr-Pak, Inc., Bridgeport, has a wide and varied background in the aerosol packaging industry.

Probably best known for his development of Poly (VP/VA) Copolymers for use with hair sprays and protective films in aerosol containers, Mr. Elmi also developed the use of Ciba's "325 Resin" for application to hair sprays, and was largely responsible for the development of the foam gel charcoal lighter.

In his present capacity at Powr-Pak, he heads a research and development group which is primarily concerned with aerosol cosmetic products. This group also renders customer technical assistance and service in the formulation and packaging of aerosol cosmetic products.

A major new field at Powr-Pak is "liquid-stream" dispensing, and Mr. Elmi has set up a special laboratory department on this new advance in aerosol packaging. Augmented by new equipment and new personnel, he has been developing food, cosmetic and pharmaceutical liquid-stream dispensing products. His group has done a great deal of work on checking stability, various combinations of bases, special valves, shelf life, chemical properties and physical properties of liquid stream dispensing products. A quality control department is now in operation and Mr. Elmi's group is handling technical service to Powr-Pak's clients.

Prior to his association with Powr-Pak, Mr. Elmi was with the technical service department of the General Chemical Division of Allied Chemical and Dye

Corp., in Edgewater, N. J. Here, he was one of a group of technicians who conducted an aerosol educational program throughout the United States—lecturing on aerosol packaging, formulation of products, preparing samples and doing market research to show the aerosol potential in various regions. His group also worked with the company's salesmen to provide them with the necessary technical information on aerosol packaging.

Since his graduation from St. John's University (with a B.S. degree in chemistry), Mr. Elmi's career has been devoted to the cosmetic and pharmaceutical industry, with particular emphasis on aerosol applications. Recently he returned to St. John's to lecture on new developments in aerosol cosmetics.

Joseph H. Fredette, assistant general manager of the New Products Department of American Can Co., New York, like other executives in the pressure container industry, believes only a fraction of the aerosol potential has been realized. He thinks the pressure container, already adapted in just a few years to so many products, will be packaging many more products of a much wider variety in the near future.

He is convinced pressure container packers will see a great deal of automatization of their operations soon and foresees the day when they will be filled and closed at a rate of about 300 per minute (compared with the present 60 to 150 range) and with the use of much less labor.

Mr. Fredette is a Canco veteran, having begun with the company in 1935 in its Manufacturing Department. In 1941 he went into the army, going up through the ranks from private to captain, and in the eight years after the war he became a major in the famous 102nd Cavalry "Essex Troop," New Jersey National Guard.

In 1946 he returned to American Can, becoming a member of its metropolitan sales staff. He joined the general sales department in 1951, and in that year became interested in the aerosol industry.

Mr. Fredette became a "charter" member of Canco's New Products Department in 1955 and in June 1957 was named the department's assistant general manager.

Builders Sheet Metal Works, Inc., Adds Small Production Cold Filler to Complete Line of Lab Equipment

A small production line 'cold filler' capable of filling approximately 1,000—6 oz. cans per 8 hour day with one operator. Two different propellants can be filled and twenty cans and product can be precooled in the cold box. Complete assembly includes an air crimper, air compressor, and laboratory scale all mounted on a formica table top 30" x 48".

The refrigeration unit is of the water cooled open type design, taking advantage of the inherently high efficiency of the water cooled design and the serviceability of the open unit. Water flow is fully automatic and stops when the unit is off.

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Drill Press Capper for fastening valves to glass bottles at production rate of approximately two per minute.

Screw-on Top Containers for making aerosol samples with minimum investment in equipment.

Other standard lines are new metal to glass stainless steel couplings, corrosion ovens, stainless tanks, tank racks, dry ice machine for producing solid carbon dioxide, laboratory shelving, formica tops, and pressure testers.

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VAH Announces New "Dry" Aerosol Fragrances

Van Ameringen-Haebler's new line of aerosol fragrances makes possible the formulation of aerosol sachets requiring little or no alcohol. Through use of these new fragrances, a whole new series of personal products is expected to be made possible.

A NEW series of aerosol fragrances, which are highly soluble in the commonly-used propellants has been developed in the research laboratories of van Ameringen-Haebler, Inc., New York. The fragrances, resulting from a long-term study, make possible the formulation of "dry" aerosol sachets and related products requiring little or no alcohol.

According to VAH researchers, the propellant-soluble fragrances overcome a number of problems which have long confronted aerosol producers. Among these has been the tendency of resinous constituents in some fragrances to settle out and impair valve action. Moreover, certain types of fragrances are incompatible with fluorinated hydrocarbon propellants and unstable in terms of aromatic quality. These new VAH fragrances are said to have none of these shortcomings and to permit the perfumer to include in his compositions such normally insoluble ingredients as benzoin, oak moss, tolu, tonka, mace, myrrh, styrax and fir balsam.

Aerosol products in which the alcohol content is low or considered undesirable are promising fields of application for these unique fragrances. For example, aerosol sachet perfumes, which are customarily sprayed on clothing or linens stored in bureau drawers, can mar varnish or shellac finishes if even a small amount of alcohol is present in the formulation.

Other products in which these new materials will find use include alcohol-free hair lacquers and a number of pharmaceutical aerosols in which the use of alcohol is undesirable, such as topical burn remedies, anaesthetics, antibiotics, bandage sprays and inhalants.

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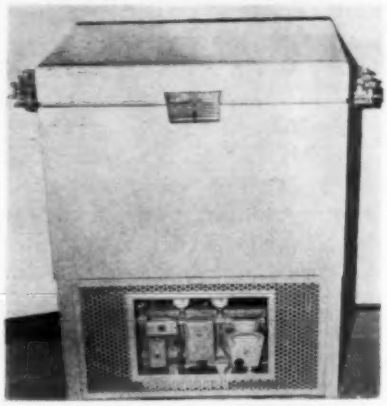
Aerosol Test Cabinet



A new laboratory aerosol test cabinet, with a capacity of approximately 100 eight-ounce cans, has been announced by Monsen Refrigeration Service, Bloomfield, N. J. The unit has a temperature control of 0° to —40°F., with a thermal capacity at —40° of 1200 btu's per hour.

The cabinet is equipped with six propellant circuits with pressure protection, and a positive contact (refrigerant to propellant) evaporator. The refgrigerant used is Freon 22 or Genetron 141.

•

Baltic Pelleted Paints

Baltic Chemical Co., Brooklyn, N. Y., manufacturer of snow formulations in pellet or stick form for loading into aerosol containers, has announced that paint pigments will now be supplied in capsules.

Similar to snow sticks, the capsules can be dropped in the aerosol container, and the solvent and propellant added to complete the formulation. Pharmaceutical and cosmetic applications of encapsulating non water-miscible substances are also under study, Baltic reports. The studies are being conducted under the Edelstein patent No. 2,764,454.

•

Pyridine Technical Sheet

Beacon Chemical Industries Inc., Cambridge, Mass., last month issued a technical data sheet announcing the availability of "Pyridine N-Oxide" in commercial quantities.

Montecatini Unveils New Plastic Material

MOPLEN, Montecatini's new thermoplastic resin, now in production at the company's polypropylene plant in Ferrara, Italy, was presented in a wide range of molded, vacuum-formed, and extruded shapes at the company's exhibit at the Chemical Industries Exposition in New York last month. Among the prospective uses for the resin is that of injection molded and extruded aerosol containers, as well as aerosol valve components.

The new material is said to have unusual heat resistance, excellent resistance to solvents, acids, and other chemicals, and high strength characteristics. Containers made from the material exhibit high finish and surface hardness, and come in a variety of colors.

These properties, plus the fact the molecular weight and degree of crystallinity of the polymer can be varied over a wide range, are expected to open to polypropylene a wide field of other industrial applications, including pipes, fittings, valves, heat-sterilizable bottles, impellers for centrifugal pumps, and laboratory equipment. "Moplen" thermoplastics are expected to compete with known polymers in a great many applications.

"Moplen" is the first commercial example of the directed polymerization of low-cost propylene gas by specially-devised steriospecific catalysts. The new family of polymers gives indications of being highly impervious to gases and vapors, an important characteristic for aerosol container material.

Based on the Montecatini discovery, future plastic synthetic materials, having different degrees of crystallinity (depending upon the stereochemical regularity of the completely-linear giant molecules), may be lighter than water, have a different degree of elasticity and, when oriented, may possess tensile strengths up to that of steel. This could mean that traditional materials might be superseded in many applications by the ready availability of superior plastics, fibers, and elastomers that can be precisely tailored to meet a wide range of end product needs.

Now being marketed in Italy, the new Montecatini polypropylene resins are currently available through Montecatini's U. S. representative, Chemore Corporation, 21 West Street, New York 6.

•

Crawling Insect Aerosol

"Zonk Aerosol Ant and Crawling Insect Killer", believed to be the first crawling insect aerosol introduced in the United Kingdom, was recently placed on the English market by Sparklets, Ltd., London. The spray is said to remain effective for several months, but does not adversely affect livestock that come into contact with treated surfaces.

The company points out that certain types of tiles, and plastic and aluminum materials may be discolored by the spray, and suggest that a preliminary test be carried out in an inconspicuous area. It retails for the U. S. equivalent of 77¢.

•

Multiple-Pack Marketing

Boyle-Midway Co., Cranford, N. J., has begun marketing its "Aero-Shave Push Button Lather" on the West Coast in six-pack wrap-around cartons. The cartons, similar to a multiple-pack sleeve introduced by Carter Products late in 1956, were designed and produced by the Container Corp. of America, Chicago.

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New Laboratory Crimper

An air-operated laboratory crimper that features quickly interchangeable collets capable of handling both standard cans and glass aerosol containers, both coated and uncoated glass, available with either can or bottle heads, or both, has been announced by Mojonnier Associates, Inc., Franklin Park, Ill. The bottle head uses interchangeable collets capable of handling all standard glass and nylon bottle neck finishes.

Light weight and compact, this unit is said to offer maximum versatility from a single machine, yet it occupies very little space. A brochure on the new unit is available.

•

New Filler Folder

The Filler Machine Co., Philadelphia, has just released a new folder giving the features and specifications of six typical Geyer custom-built automatic filling machines for semi-liquids and semi-solids. The machines, which fill up to 250 containers per minute, can be cleaned and changed over to different products.

Copies of the folder may be obtained by writing to the company at 10 Penn Ave., Rockledge, Phildelphia 11.

SCC Meeting

(*From Page* 21)

the loading operation."

When a flammable auxiliary solvent, such as odorless mineral spirits, is used, flammability becomes a factor, Mr. Sanders admitted; though he made the point that the ratio of propellant to solvent does not appear to be a controlling factor. As a result of Du Pont studies, he suggested that emulsions of 20% odorless mineral spirits can be considered non-flammable, those of 30% mineral spirits flammable but non-flame sustaining, and those of 40% mineral spirits flammable and flame-sustaining.

"A change in the valve actuator from standard to mechanical break-up type in some cases may shift a product that is flammable by the flame extension test into the non-flammable category by widening the angle of spray. However, this may work in reverse through a better aeration of the sprayed material."

In conclusion, he suggested that the ability to vary spray characteristics of emulsion systems from very fine to very wet opens up a wide range of potential products that might make use of the application, including topicals, antiseptics and antiperspirants (where a wet spray is desired), to room deodorants and sanitizer sprays (where a fine mist is desirable).★

Aerosols Overseas

(*From Page* 24)

field. Our own guess is that *both* will occur.

Europe lags with its own aerosol valves, but with the coming of the Common Market we look for this situation to change. Presently, the most popular valves are either U. S. imports or U. S.-type valves produced

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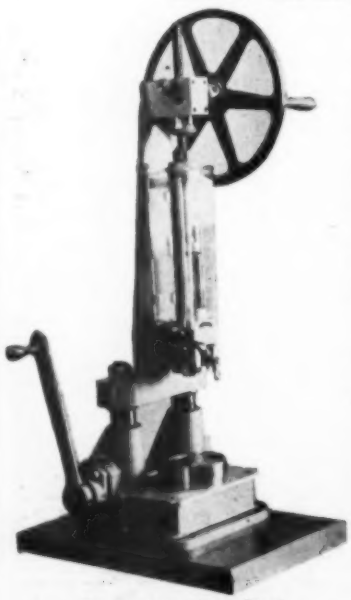

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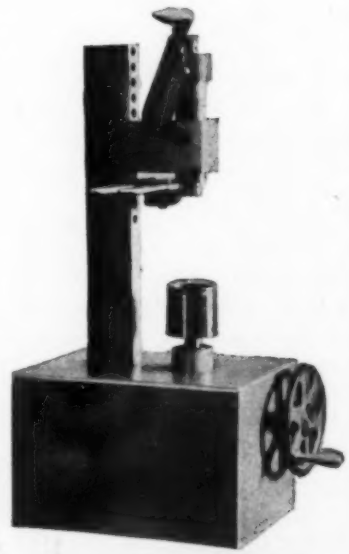


Foresman Hand Operated Vial Capper

in Europe under license. In this tricky little mechanical device, U. S. experience with its enormous volume has put the U. S. away out in front, though Europeans are fast developing their own valve types suitable for their product formulations and filling requirements. Protected by a common tariff wall, transportation costs, and license fees for locally-produced U. S. type valves, the European manufacturers, with their on-the-spot customer services, familiarity with languages, and other advantages, soon may dominate the Common Market valve demand. We do not look for many new producers to enter this field — development and tooling costs are too high — nor do we foresee local manufacture of this item in the smaller member nations. On the contrary, the business will probably be dominated by a few large valve manufacturers, just as it now is in the U. S. On the whole, European loaders may be better and more cheaply served from Common Market sources than by imports.

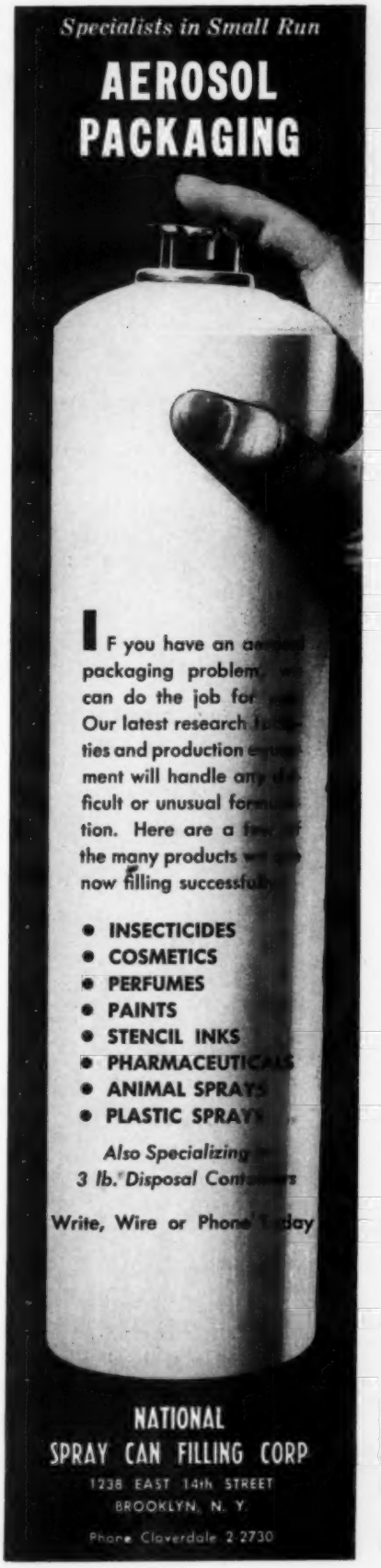
The container picture presents somewhat different problems, with raw materials and transportation costs being the principal items. Currently, the U.K. has the lowest tin-plate prices of any country in Europe (lower, in fact, than those in the U.S.).

Only the U.K. and France have continuous electrolytic tinning lines. But the capacity of the English tin mills is insufficient today to take care of local and export demands and for the past several years, England has even had to import substantial quantities of U.S. tin-plate to cover the deficiency. On the Continent, at least among the original six, tin mill products have for some years moved duty-free under the Schumann Plan, Coal and Steel Pool. Capacity expansion plans are under way in all of Europe's steel producing countries, but there are limitations (iron ore, coking coal, energy resources, etc.) and these heavy industry programs take years and years for their realization. So it appears tin-plate will be in short supply for some years and tin can manufacturers in the smaller nations (and hence the aerosol loaders in those nations) will benefit only to the extent that they can fulfill their tin-plate requirements from the already overloaded facilities of Common Market tin-plate producers.

AS to the container manufacturers themselves, we very much doubt whether their operations will be much affected. The purchasers in the smaller countries will benefit by the removal of import duties (which should generally lower the loader's present container costs) and a greater concentration of container manufacture may result in the hands of a few of the larger companies — all to the detriment of local manufacture. Basically, however, the situation with the aerosol tin-plate container should not materially change.

The shortage of tin-plate and the relatively high price of European tin-plate aerosol containers will, we believe (together with Common Market implications), give an added boost to the aluminum impact-extruded can. If the Italians, for example, by improved processes, can produce cheaper aluminum slugs which move duty-free into other Common Market nations, it should stimulate local installation of the necessary presses and printing equipment. Here the weight factor is important in both raw material and finished product, and the European will soon learn — as his U.S. counterpart has long since known — that with larger and wider markets, transportation costs play an increasingly serious rôle in manufacturing and marketing decisions. We definitely look for an expanding market in aluminum aerosol containers and their local manufacture in the smaller member nations.

Turning to chemicals, we foresee very little change except that U.S. chemical companies will be confronted with a common tariff wall around all member nations, whereas up to now they have been able to export to the non-producing countries on an equal basis. This should be all to the advantage of buyers in the smaller countries, bringing eventual lower aerosol consumer prices. During the war, the U.S. went ahead of Europe in chemi-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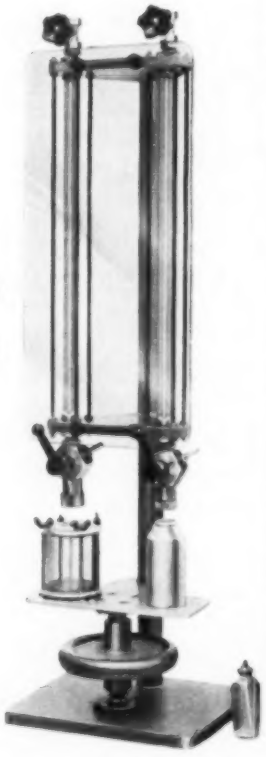

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cals, but post-war European expansion projects, together with new developments and additions, are rapidly closing the gap. With what Europe already has, and has planned, the Common Market chemical demand (except perhaps for a few specialty products) should be well covered by Common Market producers, with plenty left over for export.

THE Common Market already has three pressure equipment loading manufacturers (one each in the U.K., Germany and Switzerland). It is to be expected that either one of these, or a new company, will bring out cold line machines and also that these three existing manufacturers will, in the future, expand their present lines with constant improvements on the items offered. We very much doubt that U.S. equipment manufacturers will be able to export to the Common Market, not only because of the common tariff wall but also because of their higher manufacturing costs and very much higher prices. But the removal of duties in the smaller Common Market countries on purchases from Common Market equipment manufacturers should lead to the establishment of many more smaller loaders. With these advantages, we look for more smaller loading stations. European development has already shown that the future lies rather in this direction than with the larger contract loaders, as it seems to be in the U.S. More local loaders will mean an increased variety and, presumably, an increased volume of aerosol products. What, then, about market conditions?

To American business men used to thinking of one market from the Atlantic to the Pacific, one currency, one language, coast-to-coast distributor outlets, and a fertile 170 million buying public, the revolution which the Common Market will bring to Europe is scarcely comprehensible. "But we are such a small country and we have such a small market" has been the usual outlook of Europe's industrialists. Consequently, they gear their expansions for exports and join local trade organizations to regulate prices and production. Under Common Market conditions, we foresee the gradual disappearance (except, perhaps, for a few purely local exceptions) of these restrictive trade organizations. The Marshall Plan and a new economic fervor in Western Europe have unloosed individual competitive ambitions in many of the highly industrialized countries (Germany, Belgium, and Holland, in particular) bound to find their natural outlets and which can only be satisfied by greater enterprise, larger production, more investments and higher profits. With the horizon lifted to a prospective market of 200 million, individual sights will have to be raised accordingly. The "old guard," full of skepticism and doubt, will be for holding back. The "youngsters" will be for the main chance and for unlimited expansion. For the obvious reasons, we bet on the "youngsters."

On the whole, the Common Market (with which, practically speaking, the European aerosol industry will truly "come of age") should present a most salubrious climate for the industry's future development. Prices should go down and volume increase. More people should make more money and consumers demand and receive better products. If only politics can be held to the minimum, the next 10 to 15 years look indeed bright.★

Aerosols in Review

(*From Page* 30)

vantage. He must be in a position to state the amount of finance available to enable the firm to enter into the project, and the manner in which it will be available; in other words, if it will be available in a lump sum or over a period of time."

. . . "The next conflict to arise will be between the technical director, the production manager, and the chief chemist. The technical director will be faced with the problem of making a decision as to what kind of filling equipment will be purchased. He will be very much influenced by the production manager, who will naturally enough want to ensure that at all

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times he will have sufficient capacity to cope with increased output, rush orders, and be able to catch up on deliveries which are behind due to seasonable sickness, holidays, etc. Last but not least, the chemist will want equipment versatile enough to enable him to put through short experimental runs; and he may also want to lay down policy regarding the material from which the equipment is constructed."

•

THE performance and economy of Lethane in aerosols is the subject of the November "Insect - O - Bits," monthly publication of Rohm & Haas Co., Philadelphia. The four - page periodical reports that it takes only one one-thousandth of a cubic centimeter of Lethane 384 in one cubic foot of air to paralyze an average fly.

Lethane works, the article says, by a rapid paralyzing of an insect's peripheral nervous system, which is located in the extremities of the insect's body. This system, which controls locomotion and sensory reactions, is poisoned by Lethane, causing the insect rapidly to lose its sense of direction and its ability to move.

As a typical economical formulation employing Lethane, the following is suggested:

.15%	pyrethrins
.375%	piperonyl butoxide
1.00%	Lethane 384
2.00%	DDT

For a 12-ounce aerosol unit, the Rohm & Haas publication points out, formulations of this type may be packaged at costs of only 7.29 cents per unit.

•

A HISTORICAL review and round-up of recent aerosol developments is featured in the November issue of *Modern Packaging*. The article, one of a series in the magazine's "Surveys of Supplying Industries," quotes the CSMA figure of 320 million non-food aerosols last year, and predicts that total aerosol production "may easily pass a billion units early in the 1960's."

"The value of aerosol containers, valves, and propellants produced last year reached an estimated $56 million. Non-foods were $51 million for containers, valves, and propellants; food aerosols (almost entirely whipped toppings) were $5 million. Another $10 million was probably spent for custom loading and filling."

Modern Packaging estimates that about three-fifths of all aerosols are produced by custom fillers, attributing the remainder to the big marketers with large and sustained volume business.

The article concludes with some wide-ranging predictions, including increased use of polyethylene and other plastics and aluminum for containers, new propellant systems, and further improvements in valves, containers and propellants. Foods, pharmaceuticals, personal products, utilitarian items, and industrial uses are seen as offering the biggest product-type potential.

"Aerosols are expected to eventually take over 75% or more of the cologne and perfume market. The aerosol paint and coatings field seems assured of growth to very high volume. The same is true of space deodorants and cleansers."

•

AEROSOLS and the Perfumer is the subject of an excellent article in the November issue of the English trade journal, *Soap, Perfumery & Cosmetics*. Written by Edward P. Morrish, technical director of Firmenich, Inc., New York, the article discusses in detail a number of special problems the perfumer faces with aerosols, particularly in some of the newer chemotherapeutic cosmetics that are difficult to perfume.

Mr. Morrish warns that, "with the inception of the aerosol, the perfumer-artist-creator-chemist must add to his knowledge a learned acquaintance with physics, gas chemistry, metallurgy, corrosion, and plastic know-how. The effect of an instantaneous odor perfume component explosion in the form of aerosol particles that attack the organoleptic senses with a neuro-sensory activity never before experienced in perfumery art or technology is a new experience for the perfumer. There are no top notes and residual notes. Suddenly the odor-perceptive senses are exposed to a cacophony of odorous components."

After discussing each of the factors that must be considered in aerosol perfuming, Mr. Morrish writes: "To date, most aerosol perfuming has been by the 'long guess,' and this is the reason that most aerosol perfuming has been erratic and faulty. Even some of the successful aerosol perfumes have proved to be so more by good fortune than by intent."

"It is difficult for many creators and purveyors of outstanding classic perfumes to realize that their great perfumery success *in alcohol* cannot easily be adapted to the new aerosol vehicle. Truly, if they had to go back from alcohol, as a vehicle, to beaten olive oil or animal or vegetable greases, they could not expect such lovely classic fragrances."

In a discussion of the perfumery problems peculiar to aerosols, the author makes the following interesting points:

"The choice of coupling agents is extremely important to achieve the solubilities required for proper perfume composition. The choice of a coupling agent may possibly permit the development of a true aerosol classic perfume.

"The same odor intensity and effect may be achieved with 1, 2, 2½ and 4% solution in the alcohol co-solvent when sprayed from an aerosol container.

"If normal alcoholic perfuming techniques are used, aerosol propulsion creates strange bedfellows of normally compatible alcoholic perfumery components.

"The top notes are usually exaggerated beyond all normal perfumery experience."

Turning to non-perfume components, Mr. Morrish suggests that, in the U.S., several commercial failures of hair lacquer sprays can be attributed to poor selection of perfume components and inadequate shelf life of the product. "In these products the strange effect of shellac or polyvinyl pyrollidone on perfumery mixtures caused the trouble." ★

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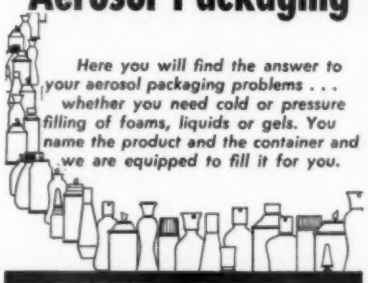

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Reddi-Whip Names Agency

D'Arcy Advertising Co., Toronto, has been named to administer the Canadian advertising for the new pressurized whipped cream can of Reddi-Whip, Inc., Los Angeles. The introductory campaign will be supported by full-color magazine advertisements over a ten-week schedule, as well as black-and-white ads in newspapers in leading Canadian cities.

Product Survey

(*From Page* 20)

28.7% of the households, and in 1957 the figure dropped to 22.4%.

Rise narrowly captured first place from Palmolive in the competition for top shaving cream sales, though the .1% difference may not be indicative of the actual difference in such a small representative sample. However, Palmolive did drop 7.7 percent-

HOUSEHOLD AIR DEODORANTS

	Total Home Cooking Households	Households buying this product
1957	407,300	65.7% or 267,596
1956	397,200	65.4% or 259,769

Had brand bought last in home 52.8%

Brand(s) Bought Last
TOP TEN BRANDS

	1957	1956
1. Air Wick	27.5%	31.3%
2. Stanley	17.0	16.6
3. Florient	14.4	11.8
3. Wizard	14.4	15.2
5. Fuller	6.3	4.3
6. Pine-Sol	2.0	2.9
7. Avon	1.7	*
8. Jewel Tea	1.2	1.7
9. Dazy	1.0	1.0
10. **	1.8	
All Others	7.5	9.7
Brand Unknown	6.1	5.1
	100.9	

Product Availability During This Survey
GROCERS

Indep.	Chain
38%	A P C E M S S E T W
—	
40	A P C E M S S E T W
59	E M S T W
—	
43	A P C E M S S E T W
—	
—	
1	A P

** "Good Air" and "Glade" tied for 10th place, with 0.9%.

age points from its previous year's sales. Mennen, Colgate, Old Spice, and Gillette all showed marked gains.

Hair fixatives, not included in the 1956 audit, showed Revlon and Helene Curtis far ahead of all other brands, with Revlon accounting for 38.3% and Helene Curtis for 35.4%. A surprisingly large proportion of the households surveyed, 42.3%, reported having purchased the product within the last 12 months.

One product, Real-Kill, dominated the insecticide category, though, as with hair fixatives, lack of a figure for the previous year made it difficult to observe any trends or changes in buying habits. Gulf-Spray also finished strong, garnering 19.6% against Real-Kill's 34.5%.

Air-Wick, a non-aerosol liquid "wick" deodorant (at the time of the audit) dominated the household air deodorants; with 27.5% of the market; but apparently forfeited some of its 31.3% in 1956 to rising aerosol competition. Of the aerosol products, Stanley, Florient, and Wizard finished strongly.

Though included in the audit, personal deodorants were not divided into methods of application; and hence the aerosol products are combined with jar, stick, squeeze bottle, roll-on, and other means of applications.★

Gulf "SA" Valve

(From Page 12)

Mr. Sharpless then illustrated a similar graph of tests in which the valve slide orifice was held constant at 0.0625" diameter, and the body orifice was varied in the range of 0.015" to 0.075". The resulting graph pattern resembled that of Figure II in general pattern of converging lines.

As to the cost of such a valve, Mr. Sharpless declared: "It would seem that, with large-scale production, using conventional valve manufacturing methods, costs can be reduced eventually to the basic cost of the valve plus the cost of the slide or other device and the royalty on the patents."

He acknowledged that additional

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developmental work would be required on the valve, including determination of the best material for the slide, evaluation of the valve with various formulas, etc.

In conclusion, Mr. Sharpless reiterated the announcement, originally made in May, that Gulf does not plan to manufacture the valve, but instead will make it available to the public through non-exclusive licensing to valve manufacturers.★

Protective Coatings

(*From Page* 13)

and further they offer difficulty for pigmentation."

He pointed out that nitrocellulose enamels dry very fast, often being dust free within two to four minutes. Alkyd enamels, on the other hand, take about an hour to become dust free. However, Mr. Hecht pointed out, formulations including both these leading varnishes and lacquers result in the most acceptable aerosol spray coatings.★

Silicones in Aerosols

(*From Page* 19)

solvents and aluminum pigments will withstand temperatures of over 1000°F. Such uses as sprays to prevent grass sticking to lawn mowers, snow sticking to snow shovels, leaf shines, and high fidelity record sprays will open up new markets for aerosol-silicone sprays, he advised.★

Pharmaceutical Aerosols

(*From Page* 11)

been used as well as epinephrine as pneumodilating agents in the treatment of bronchial asthma.

"Significant systemic action may be demonstrated when certain medicinal agents are administered as aerosols. Among these may be included various vasoconstrictors, vasodilators, cardiotonics, diuretics, convulsants, central nervous stimulants, and depressants, hormones, and antibiotics. In these cases, the medicaments are not localized on the pulmonary tissues but are actually absorbed into the blood.★

Vic DiGiacomo (Givaudan-Delawana), and Sig Was and Fred Pickering (VCA). Ed Budzilek and Bob Allen (Wheaton Plastics), Paul Silverman (Helene Curtis) and Dr. F. C. Mina (Lodes Aerosol Consultants).

New Aerosol Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication.

Complete copies of these patents may be obtained by writing to the publisher of this magazine, Aerosol Publications, Box 31, Caldwell, N. J., and remitting 50c for each copy desired. For orders received outside of the United States the cost will be $1.00 per copy.

2,812,109. CONTAINER. Patent issued Nov. 5 to Richard K. Wentz, Baltimore, Md.

A portable container adapted to fit inside an ordinary home refrigerator for storing and dispensing effervescent liquids, and the like, comprising a generally rectangular housing, said housing having an opening formed in one end thereof, a sleeve secured to said housing within said opening, a washer-like member threadedly engaging said sleeve, a pressure tight sealing ring carried by said sleeve and engaging said bushing to provide a fluid tight connection therebetween radially inwardly directed flange formed on said bushing, a bellows type diaphragm carried by said flange within said sleeve and maintaining a fluid tight relationship therebetween, a hollow hub axially aligned with the opening in said housing and connecting with said bushing for support between said diaphragm and the inside of said container, a fluid filled pressure vessel carried within said container by said hub, said pressure vessel having an opening formed therein in communication with said hollow hub, a uni-directional valve carried by said hollow hub and allowing the flow of liquid from said pressure vessel to the inside of said container only in response to a force exerted thereon by said diaphragm, a protective cap carried by said housing and covering said diaphragm and limiting the movement thereof away from said valve, said cap having an opening formed therethrough for maintaining outside air pressure on the exterior surface of said diaphragm, said diaphragm being responsive to the differential pressure between the outside air and the fluid within said container for automatically controlling the operation of said valve whereby the pressure within said container is maintained always greater than the outside air pressure, and manually operable valve means carried by said container communicating with the interior thereof for removing desired quantities of the liquid carried therein.

2,812,628. PACKAGE SEALING MACHINE. Patent issued Nov. 12 to Arthur Gilbert Russel and Frank Alfred Clary, Jr., Bristol, Conn., and Francis Bernard Casey, Concord, and Robert Eldon Dallon, Lawrence, Mass., assignors to W. R. Grace & Co., New York, N. Y., a corporation of Massachusetts.

In a machine of the class described, a pivoted arm adapted to swing a crimping head into and out of engagement with the twisted neck of a container, a cam to drive said head, rotating power means to drive said cam, a single turn clutch having a projecting stop pin connecting said cam to said power means, a stop arm arranged to intercept the projecting stop pin, externally activated means to withdraw the stop arm from contact with the projecting stop pin, a swinging stop block arranged to intercept said projecting stop pin, a link pivoted to the pivoted arm and to the swinging stop block, the pivot position of the link on the arm being such that the stop block remains in the path of the stop pin of said clutch at all times other than when the crimping head is in its forward position.

2,814,269. APPARATUS FOR FEEDING AND COATING LABELS. Patent issued Nov. 26 to Rudolf Stahr, Metzkausen, near Mettman, Germany, assignor to Jagenurg-Werke Akt.-Ges., Dusseldorf, Germany.

Means for withdrawing labels from a stack of labels in a labelling machine including an arcuate label receiving surface adapted to be coated with adhesive, means mounting the label receiving surface for movement in an arcuate path, a label magazine having a stack of elongated labels therein adjacent said surface with the end label exposed, means mounting the magazine for movement in a to and fro path with the end label tangentially of and in juxtaposition to the arcuate path of movement of said label receiving surface, drive means for effecting simultaneous continuous movement of the surface and initial movement of the magazine in a forward direction so that adhesive applied to the label receiving surface contacts the end label of the stack and partially withdraws the same, said drive means including means for interrupting the movement of the stack at a position in its stroke in which the end label has been moved in synchronism with the said surface and in contact therewith a distance corresponding to approximately one-half the length of the label, said drive means further including means for temporarily holding the magazine stationary whereby the stack of labels maintains contact pressure between the end label of the stack and the label receiving surface so that the uninterrupted movement of the said surface completes the withdrawal of the end label from the stack and said drive means reversing the movement of the magazine from the position occupied by the same

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when its forward motion was interrupted to return the magazine to its initial position through a movement corresponding to only approximately one-half the length of the label so as to increase the number of labels transferred from the stack to the label receiving surface in a given period of time.

Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

SPEE-DEL, in large italics, for pressurized or aerosol containers for household and industrial uses filled with insecticides, insect repellants, room deodorants, weed killers, plant sprays, disinfectants, fire extinguishing compositions, lighter fluids, water-proofing compounds, a plastic compound containing oil of cedar for lining closets and chests, and compositions for producing material having the appearance of snow on Christmas trees and other objects. Filed June 20, 1955 by Demert & Dougherty, Inc., Chicago, Ill., claiming first use on or about May 29, 1952 on aerosol insecticides.

ESQUIRE SHOE RE-FRESHNER and WATER SHED, the first for spray for shoes for foot hygiene, the second for a leather waterproofing spray. Both filed Dec. 6, 1955 by Knomark Manufacturing Co., Inc., Brooklyn, N. Y., claiming first use Aug. 1955.

SWIFT-SURE, in italics, for insecticide. Filed Aug. 27, 1956 by The Gerson Stewart Corp., Cleveland, Ohio, with first use claimed January 1929.

PINE-MIST, in solid capitals, for disinfectant. Filed Oct. 29, 1956 by Plough, Inc., d.b.a. International Distributors, Memphis, Tenn., claiming first use Sept. 1954.

POND'S ANGEL, for cologne, perfume, personal deodorant, hair dressing lotions, and a broad range of cosmetics and toiletries. Filed Mar. 29, 1957 by Chesebrough-Pond's Inc., New York, claiming first use Feb. 4 of same year.

W. Alec Jordan

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SET AND NET, for hair set spray. Filed Apr. 30, 1956 by Coty, Inc., New York, with first use Apr. 24 of same year.

EXZET and EKSTSET, for cosmetics, especially hair oil. Filed Jan. 14, 1957 on priority filed Aug. 4, 1956 by Berner Osakeyhtio, Helsinki, Finland.

BEAUTY SET, for wave control cream. Filed Apr. 9, 1957 by Bymart-Tintair, Inc., New York, with first use Jan. 21 of same year.

HOME SWEET HOME, for aerosol air refresher (room deodorant. Filed Apr. 26, 1957 by Daggett & Ramsdell, Inc., New York, with first use Mar. 4, 1957.

BODYGUARD, for deodorants. Filed May 7 by Donne Bell, Inc., Lakewood, Ohio, claiming first use Feb. 25, 1936.

SET PLUS NET, for hair set spray. Filed April 30, 1956 by Coty, Inc., New York, with first use claimed Apr. 24 of same year.

DRI-SHAMP, for aerosol packaged shampoo. Filed Aug. 28, 1956 by Lanolin Plus, Inc., Chicago, claiming first use June 4, 1956.

NURSERY MIST, for germicidal room deodorant. Filed Nov. 29, 1956 by B & C Products, Inc., Upper Darby, Pa., with first use claimed Sept. 14, 1956.

CUBETOID, for insecticide and larvicide in liquid or granular form. Filed Oct. 1, 1956 by Whitmire Research Laboratories, Inc., St. Louis, Mo., with first use Apr. 30 of same year.

•

Givaudan Visits U. S.

Leon Givaudan, director and general manager of Companhia Brasileira Givaudan, Sao Paulo, Brazil, has returned to South America after a three-week visit to the U. S. During his visit, he held discussions with members of the staff of Givaudan-Delawanna, Inc. and with other members of the toilet goods industry, reporting on developments of the industry in South America and the progress made by the Givaudan company in Brazil. Mr. Givaudan also reported on the increased number of aromatics being manufactured by his company and on the broadening of facilities there.

•

2,000 Enter Velsicol Test

More than 2,000 garden supply retailers entered the $10,000 Chlordane "Show and Sell" contest sponsored by the Velsicol Chemical Corp., Chicago, last spring.

Winner of the national prize for the best Chlordane display was the Easy Bay Nursery of Berkeley, Calif. The first prize included a seven day trip to Paris for two and $1500.

Compressed Gas Meeting

The program for the 45th annual meeting of the Compressed Gas Association, Inc. will feature a series of pertinent technical papers, and addresses of special interest to the industry. The meeting will be held on Monday and Tuesday, Jan. 20 and 21 in the Waldorf-Astoria, New York.

Maj. Gen. William M. Creasy, Chief Chemical Officer, U. S. Army, will deliver the luncheon address Jan. 20, on "Should We Worry About Chemical and Biological Warfare?" A technical session will follow with John J. Crowe, Air Reduction Co., Inc. as moderator. This session will feature three papers: "Determination and Correlation of Flow Capacities of Pneumatic Components" by Dr. Donald Tsai and Dr. M. M. Slawsky, Bureau of Standards, U. S. Dept. of Commerce, "The Settled Pressure Characteristics of Acetylene Cylinders" by Roger A. Clemons, Linde Co., a division of Union Carbide Corp., and "Impact Testing of Combustibles in Liquid Oxygen" by F. C. Saacke, Air Reduction Co.

At the luncheon on Jan. 21, Dexter M. Keezer, director, McGraw-Hill Publications, and director, economics staff, *Business Week* will speak on "What's Ahead for Business? A technical session will follow and present "A Symposium on the Control and Use of Radioactive Gases" with W. G. Sylvester, Walter Kidde & Co. moderating. The session will open with a color film titled "The Petrified River — The Story of Uranium" after which the following papers will be presented: "Health Physics Problems and Regulations Associated with the Use of Radioactive Gases" by Dr. Fred Cowan, Brookhaven Laboratories; "Applications of Radioactive Tracers to Oil Production" by Dr. Paul Kruger, Nuclear Science and Engineering Corporation; and, "Safety and Design Considerations in Industrial Handling of Compressed Radioactive Trace Gases" by F. A. Zenz, J. J. Byrnes, and F. Hess, Walter Kidde Nuclear Laboratories.

The association's annual reception and banquet will wind up the meeting on Tuesday evening, Jan. 21.

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New Squeeze Bottle Spray

A hinge-style cap, a polyethylene closure that dispenses fluids without being separated from the body of the bottle itself, is the newest product achievement of the Plastic Container Division of Continental Can Co., New York. The top portion of the captive closure is attached to the rest of the cap by a strip of flexible polyethylene, eliminating the possibility of cap loss. The new closure is suitable for use with standard polyethylene bottles of cylindrical, oblong, or oval shape; and, at an appropriate angle, produces a fine spray.

Dimensions of inner spray tubing may be changed, ConCan reports, making it possible to dispense solutions of a wide range of viscosity with the spray most suitable for application of the particular product. The new cap is expected to find use in window cleaners, insect repellents, air fresheners, hair sprays, and a number of other applications now in aerosol form.

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Evans Research Names Seitz

The Evans Research and Development Corp., New York, last month named Evelyn Seitz as project leader of product application in hair and scalp research.

Aerosol Newsletter

The first issue of "Pressure Gauge," a periodical newsletter published by Aerosol Techniques, Inc., Bridgeport, Conn., came out November 15. Believed to be the first such periodical published by a custom filler, it is designed to keep its readers "informed about new technological and commercial developments in the ever-changing aerosol field."

The first issue of "Pressure Gauge" contains a paragraph outline of some of the industry's recent news developments. Copies of the publication may be had by writing directly to the company at 111 Silliman Ave., Bridgeport 5.

OVER THE TRANSOM

BECAUSE of the recent nitrogen propellant development, (*Aerosol Age*, October, 1957) the toothpaste packaging industry is shortly going to see a major race to be first on the market with an aerosol package. We have reliable information that Rexall, Colgate, and Bristol-Myers are all either test marketing or about to test market an aerosol toothpaste. In fact, by the time this appears in print you may see aerosol tooth pastes by one or all three of these leading marketers being test marketed in your area.

* * *

Look for a pressurized coffee package (probably also using the nitrogen propellant) to appear on the market about midyear. Trade rumors have it that all of the physical research problems have already been licked, and that a drop-dispensed product will hit the market as early as June. It's reported to be highly superior in taste to the conventional dry instant coffees, and if successful another rush to be first on the market will almost surely develop.

* * *

The CSMA meeting in Florida, one of the most successful in recent years, was held at a time Florida was suffering through one of its worst cold spells in history. The few hardy souls who did go in swimming during the convention probably still regret it.

The Aerosol Division's film, released for general distribution at the time of the convention, may be appearing in your section of the country right now. Its first television showing was on the local Miami television station, when it was presented along with an interview of Fred Lodes (Lodes Aerosol Consultants), chairman of the Aerosol Division's Publicity Committee. Fred gave a very good account of himself, and gave the aerosol industry (at least in Miami) a good shot in the arm. The public relations agency for the Division's publicity program, G. M. Basford, is to be congratulated for getting the industry 20 minutes of prime daytime television time in a major city. It would have cost a fabulous sum if it had had to be paid for.

* * *

Two others who deserve plaudits for the convention are Mrs. Fred Lodes, who was mistress of ceremonies at the fashion show (at the same time Fred was on television), and Mrs. Harry Peterson, who was chairman of the ladies activities committee. The entire ladies program was exceptionally well carried out, and was one of the best at any convention we've seen.

* * *

Fashion and fancy dress were more in evidence at this convention than at any previous CSMA meeting (which is only proper in a resort hotel). Jack Wittke, of Oil Equipment Laboratories (pictured at left), John D. Conner, CSMA general counsel, and several others sported some of the more eye-catching jackets. A number of these others will be recognized in the convention pictures on pages 10 through 19.

* * *

The entertainment also seemed a cut above the level of that at most of the other CSMA meetings. Florian Zabach, noted violinist, headlined one show, but was given a run for the most popular by some fine local (Miami) talent.

Jack Wittke

Sudden Thought Dept.
#21
Smart suppliers are starting the New Year year right with full advertising schedules in Aerosol Age.
Are you